3

Panasonic

Mini Changer System

SC-CH60

Operating Instructions

Before connecting, operating or adjusting this product, please read these instructions completely.

COMPACT disc DIGITAL AUDIO

GN

RQT2599-L

Thank you for purchasing this system.
For optimum performance and safety, please read these instructions carefully.

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Suggestions for Safety

■ Use a standard AC wall outlet

1. **Use from an AC power source of high voltage, such as that used for an air conditioner, is very dangerous.**
   A fire might be caused by such a connection.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Never place heavy items on top of the power supply cord, nor force it to bend sharply.**

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc.
Be careful that curtains and similar materials do not obstruct the ventilation holes.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.
In places where there is excessive vibration or humidity.
Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is inclined, a malfunction may result.

■ Never attempt to repair nor reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

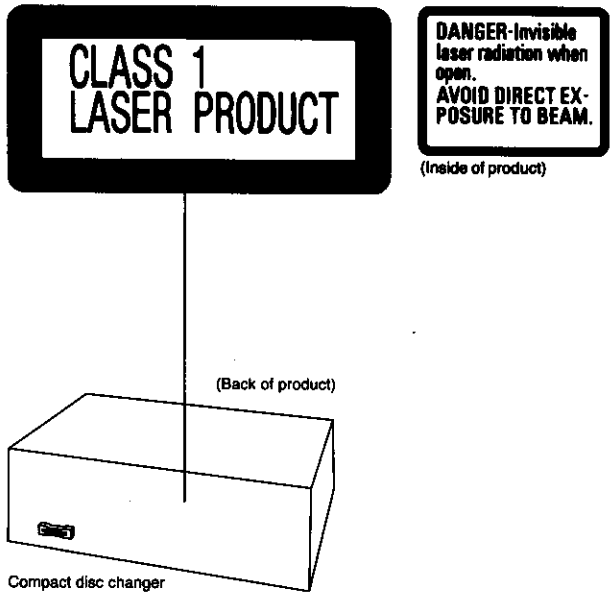
If the unit is left for a long time with the power ON, this not only will shorten its useful operation life, but also may cause other trouble.

■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if an abnormal odour or smoke is detected, immediately disconnect the power cord plug, and contact with your dealer or an Authorized Service Center.

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

THIS MUSIC SYSTEM IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY MUSIC SYSTEM CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO MUSIC SYSTEM.



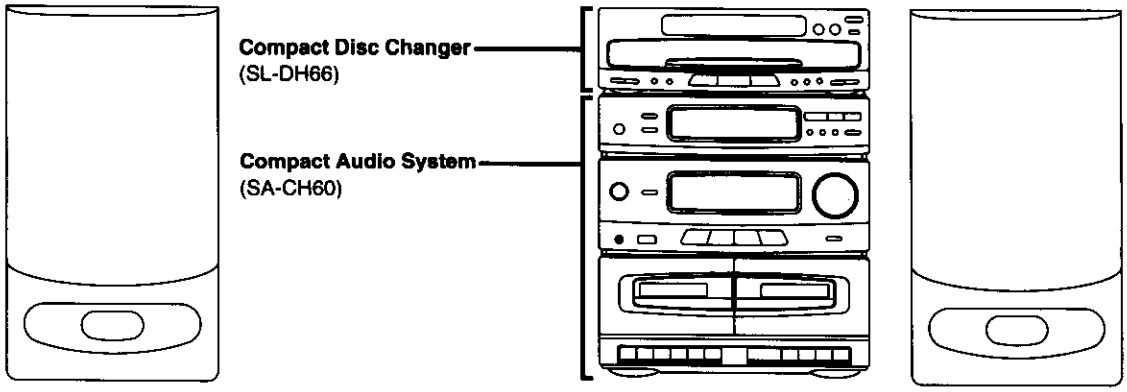
Preparations

These operating instructions are applicable to the following system.

System	Compact Audio System	Compact Disc Changer	Speakers
SC-CH60	SA-CH60	SL-DH66	SB-CH60

Stacking the components

Install the components as shown below.

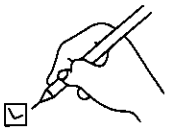


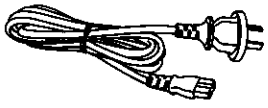
Left speaker
(SB-CH60)

Right speaker
(SB-CH60)

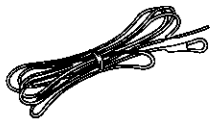
Supplied accessories

Check the packing carton for these accessories.

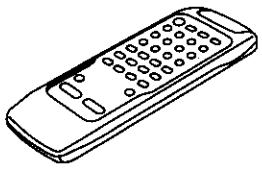




☐ AC power supply cord ..... 1 pc.

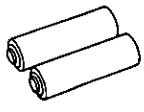


☐ FM indoor antenna ..... 1 pc.

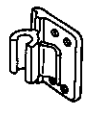


☐ Remote control transmitter ..... 1 pc.

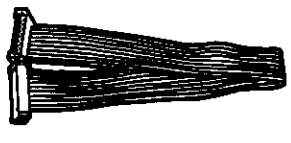
☐ AM loop antenna ..... 1 pc.



☐ Remote control batteries
UM-4, AAA, R03 ..... 2 pcs.



☐ Antenna holder ..... 1 pc.

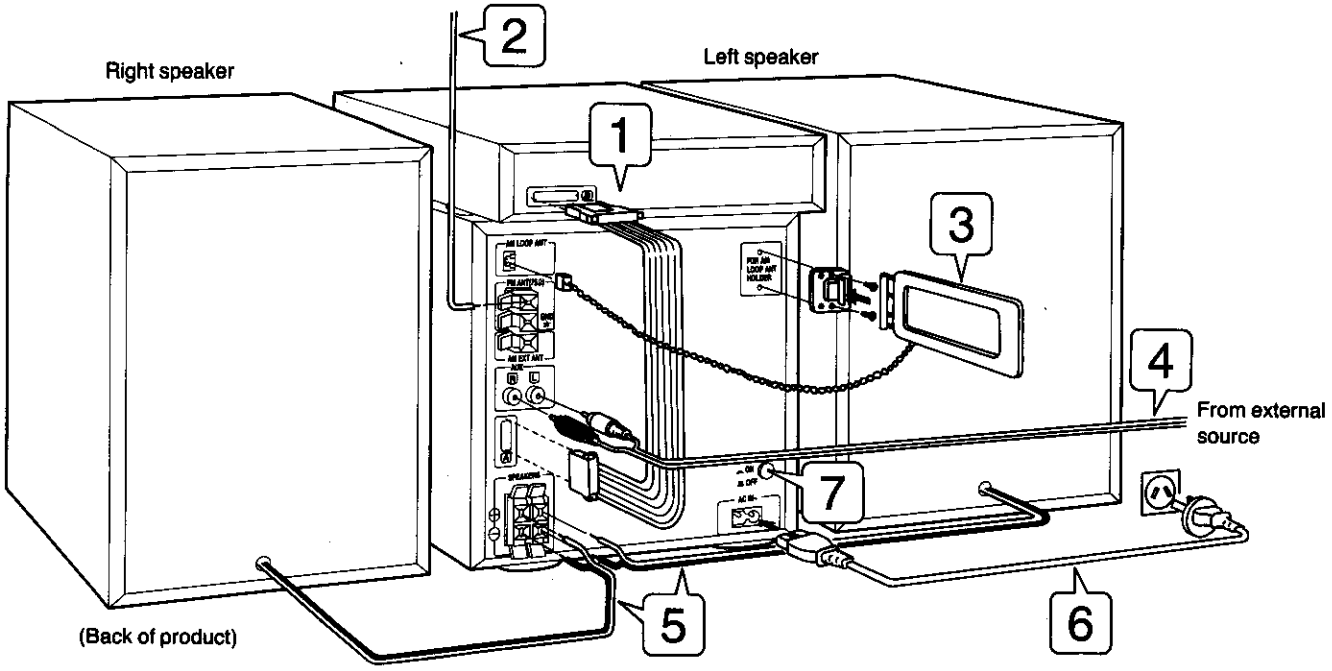


☐ Flat cable ..... 1 pc.

☐ Mounting screws ..... 2 pcs.

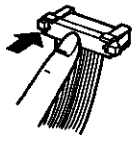
Preparations (continued)

Connections



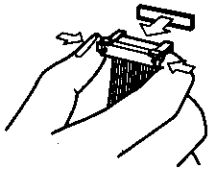
1 Connect the included flat cable to connectors A, B.

Connecting



Hold the connector with the recessed part up and press in at the center until you hear a click.

Disconnecting

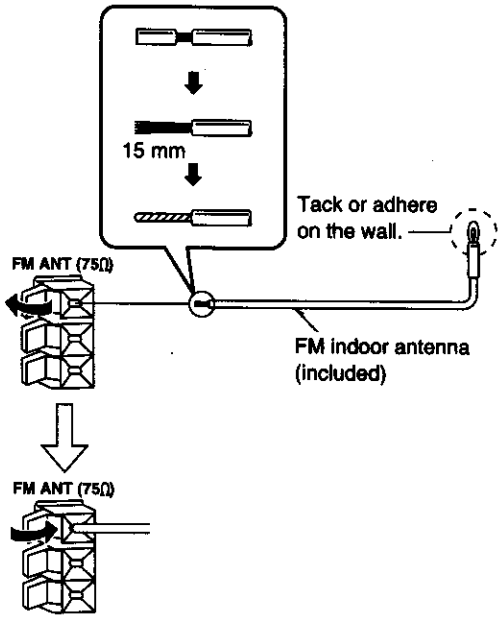


Do not try connecting or disconnecting the flat cable while the power is switched to ON.

2 Connect the included FM indoor antenna.

Tack or adhere the antenna on the wall at a height and in a direction which result in the best reception. The tip of the internal antenna wire should not come into contact with any metal object.

Connecting the FM indoor antenna

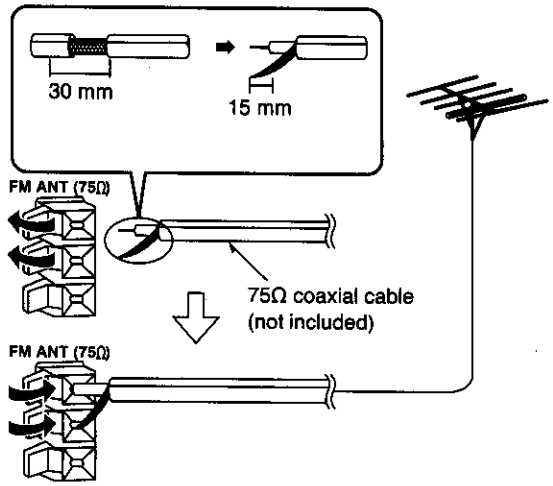


For best reception and sound quality, use an FM outdoor antenna (not included).

If you use an FM outdoor antenna, disconnect the indoor antenna.
You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.

An outdoor antenna should be installed by a competent technician only.

Connecting a 75-ohm coaxial cable

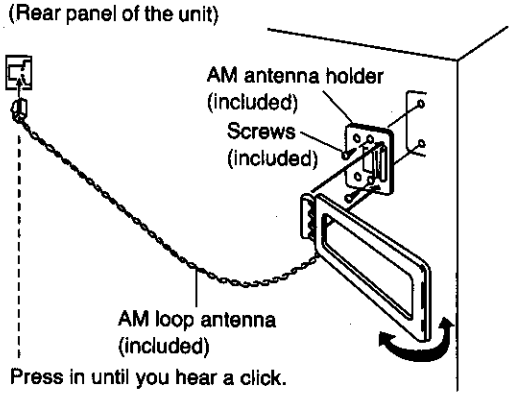


3 Connect the included AM loop antenna.

Connect the AM loop antenna to the AM antenna terminal.
You may attach the AM antenna holder to the rear panel of the system or to a rack or other structure.

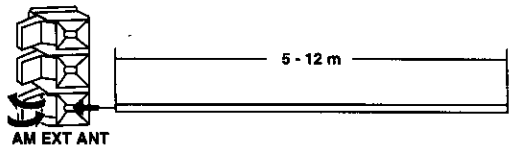
Clamp the antenna to the holder and position the loop for the best reception.
To minimize noise pickup, keep the loop antenna away from the speaker cable, power cord, flat cable, and metal surfaces.

(Rear panel of the unit)



Press in until you hear a click.

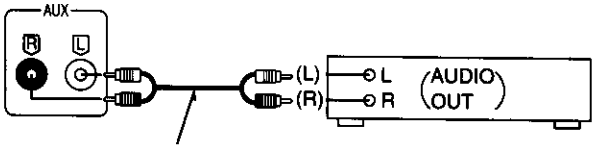
Connecting an AM outdoor antenna (not included)
You may need an outdoor antenna if you use this system in a mountainous region or inside a reinforced-concrete building, etc.
Run vinyl-covered wire of 5–12 m horizontally along the window or some other convenient location.



AM outdoor antenna (not included)

4 Connect an external unit, such as audio tape deck (for playback only) or output terminals of a VCR or TV (not included).

Connecting external unit



Stereo connection cable (not included)

Video cassette recorder (not included)

5 Connect the right (R) and left (L) speaker cables.

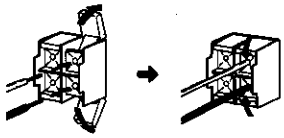
Match the two wires from the left and right speaker cables with the same colored levers of the speaker terminals, then insert the wires into the respective terminals.

Connection of speaker cables

1. Strip off the outer covering, and twist the center conductor.

Make sure the bare ends of the wires are not unraveled. (If they are, twist them tight again.)

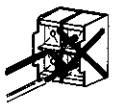
2. Insert the wire to the rear panel of the main unit, and then close the lever.



Notes:
Connect speaker cables before connecting the AC power supply.

Be sure to connect only positive (red) wires to positive (+) terminals and negative (black) wires to negative (−) terminals.

To prevent damage to circuitry, never short-circuit positive (+) and negative (−) speaker wires.



6 Connect the AC power supply cord after you have connected all other cables and cords.

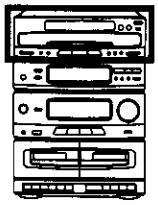
7 Press the MAIN POWER switch to ON position.

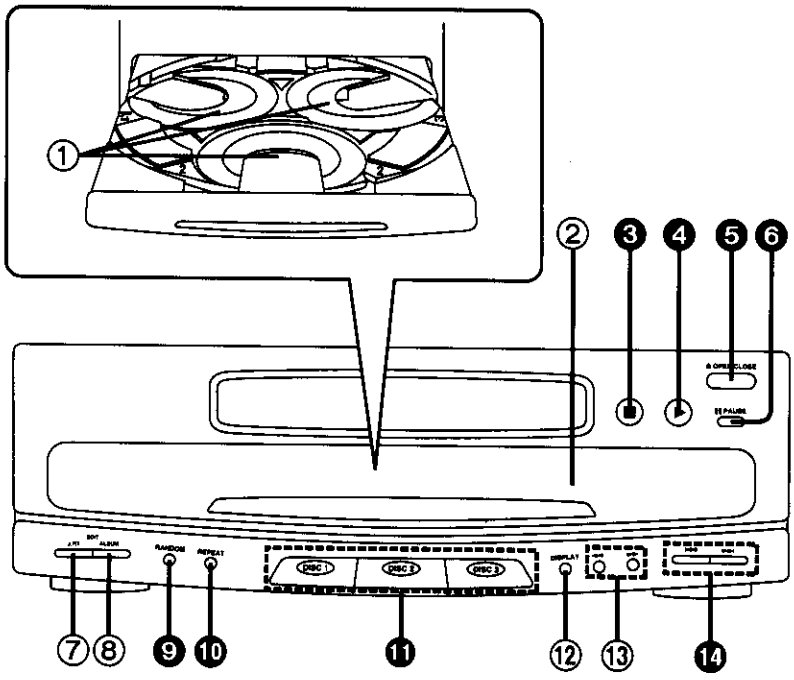
The primary circuit is always "live" as long as this switch is set to ON position.

Note:
If you don't plan to use the system for a long time, press the MAIN POWER switch to OFF position or disconnect the AC power supply cord.

Front Panel Controls and Functions

The functions indicated by the numbers with black background (for example ❸) can also be activated from the remote control transmitter. (See pages 14–15.)





Compact disc changer section

① **Disc trays (1–3)**
You can load up to three discs; one disc per one tray.

② **Loading drawer**
You can load and unload discs when this drawer is open.

❸ **Stop button (■)**
Press to stop the disc play.

❹ **Play button (▶)**
Press to start disc play.

❺ **Loading drawer open/close button (▲ OPEN/CLOSE)**
Press to open or close the loading drawer.
If you press this button while the play indicator is lit, the drawer will open to half position.

❻ **Pause button (❚❚ PAUSE)**
Press to stop the disc play temporarily.

⑦ **Fit edit button (J.FIT)**
Press to activate the fit edit mode of the edit-recording.

⑧ **Album edit button (ALBUM)**
Press to activate the album edit mode of the edit-recording.

❾ **Random play button (RANDOM)**
Press to play the disc's tracks in random order.

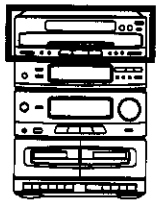
❿ **Repeat button (REPEAT)**
Press to activate the repeat mode.

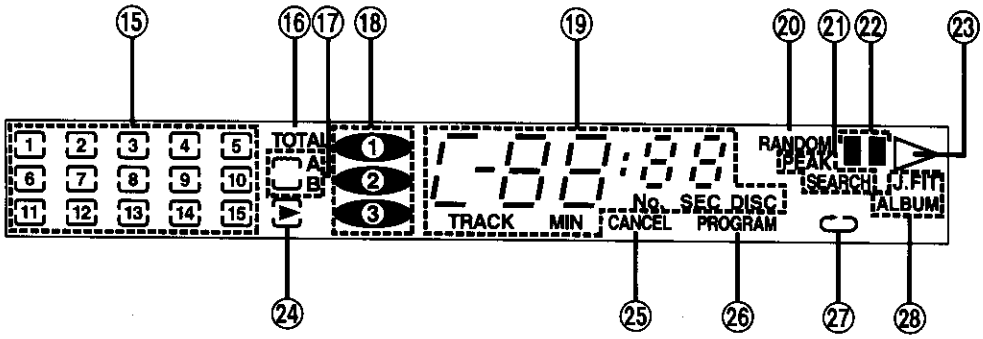
⓫ **Disc buttons (DISC 1–3)**
Press to select the desired disc.

⓬ **Display button (DISPLAY)**
Press to change the display.

⓭ **Search buttons (◀◀ • ▶▶)**
Press to hear disc sound at high speed while searching in the play mode.

⓮ **Skip buttons (|◀◀ • ▶▶|)**
Press to move forward or backward through the tracks on a disc.





Display

⑮ Matrix display
Shows the total number of tracks on a disc, and the current playing track to flash and the tracks edited on side A and B.

⑯ Total track indicator (TOTAL)
Lights to show the total number of tracks edited on side A and B when you use the edit-recording function of compact disc.

⑰ Tape side indicator (A, B)
Shows which side of the cassette tape (A or B) will be recorded on when you use the edit-recording function of compact disc.

⑱ Disc indicators (① ~ ③)
Flashes to show which disc is in play.

⑲ Multi-display
Shows the total playing time on the disc, elapsed play time of the current track, the number of tracks, current playing or recording track number, the number of programmed tracks and disc number.

⑳ Random play indicator (RANDOM)
Lights during the random play mode of the compact disc.

㉑ Peak search indicator (PEAK SEARCH)
In the edit-recording mode, lights when the compact disc changer is automatically scanning the peak level on a disc.

㉒ Pause indicator (▮▮)
Lights when you press the pause button to stop the disc play temporarily.

㉓ Play indicator (▷)
Lights when compact disc is in play.

㉔ Over indicator (⩥)
Lights if there are 16 or more tracks on the disc.

㉕ Program cancel indicator (CANCEL)
Lights when you cancel the programmed tracks.

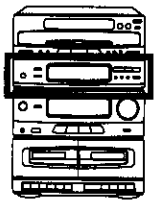
㉖ Program indicator (PROGRAM)
Lights during the program play mode of compact disc.

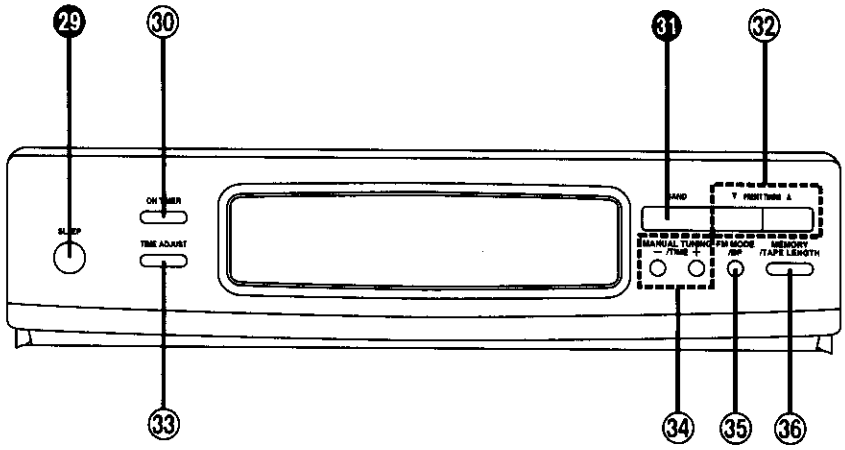
㉗ Repeat play indicator (⊂⊃)
Lights during the repeat play mode of the compact disc.

㉘ Edit mode indicators (J.FIT, ALBUM)
J.FIT: Lights when you activate the fit edit mode.
ALBUM: Lights when you activate the sequential CD recording edit mode.

Front Panel Controls and Functions

(continued)





Tuner section

29 Sleep timer button (SLEEP)
Press when you want the system to turn itself off.

30 Timer on button (ON TIMER)
Use for timer play or recording (when you want to set the system to operate automatically at a preset time).

31 Band select button (BAND)
Press to select the AM or FM radio band.

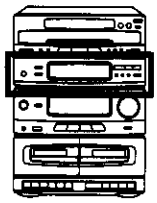
32 Preset tuning buttons (▼ PRESET TUNING ▲)
Press to program broadcast frequencies into the unit's memory, and also to recall the programmed stations.

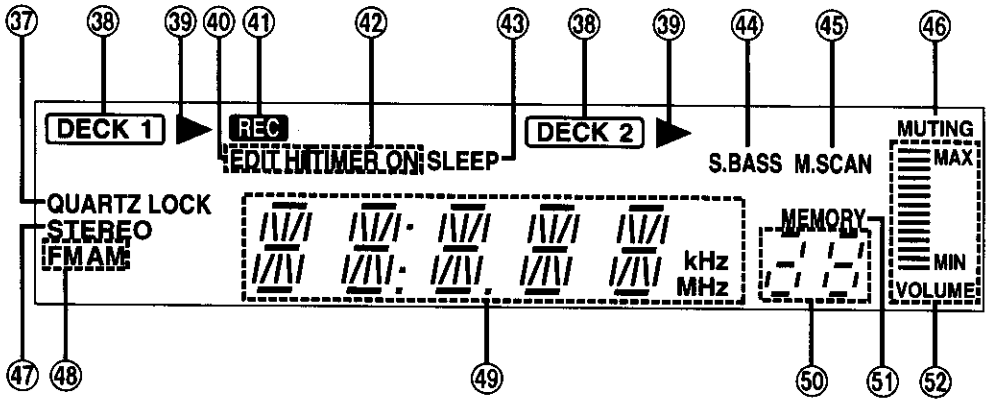
33 Time adjustment button (TIME ADJUST)
Use to adjust the clock.

34 Manual tuning/time set buttons (MANUAL TUNING −/TIME +)
Press to tune to the desired station or set the time.

35 FM mode/beat proof button (FM MODE/BP)
Press to select the FM listening mode (stereo or monaural) during FM broadcasts or to reduce the unwanted beat signals (whistle) during recording of an AM broadcast.

36 Memory/tape length button (MEMORY/TAPE LENGTH)
Press to program a broadcasting station or to set the tape length when edit-recording.





Multi-digital display

㊲ Quartz lock indicator (QUARTZ LOCK)
Lights when a broadcast station is tuned in precisely.

㊳ Deck indicators (DECK 1, DECK 2)
Light while the power is switched ON.

㊴ Tape travel indicators (▶)
Lights when the tape travels.

㊵ High speed edit indicator (EDIT HI)
Lights when the high speed editing is selected.

㊶ Recording indicator (REC)
Lights when the system is recording.

㊷ Timer indicator (TIMER, TIMER ON)
"TIMER" lights during the timer setting.
"TIMER ON" lights when the timer play or timer recording is activated.

㊸ Sleep timer indicator (SLEEP)
Lights when you press the sleep timer button.

㊹ Super bass indicator (S.BASS)
Lights when you activate the super bass mode.

㊺ Memory scan indicator (M.SCAN)
Lights when the memory scanning function is used.

㊻ Muting indicator (MUTING)
Lights when you activate the muting mode.

㊼ FM stereo indicator (STEREO)
Lights when you receive an FM stereo broadcast. It will not light if you are using the FM mode/beat proof button to select monaural mode.

㊽ Band indicator (FM, AM)
Lights to show which band was selected.

㊾ Alpha-numeric display
Shows the selected source, present time, received frequencies, volume level, etc.

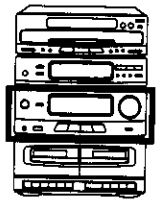
㊿ Channel display
Lights to show the preset channel number selected after pressing the preset tuning button.

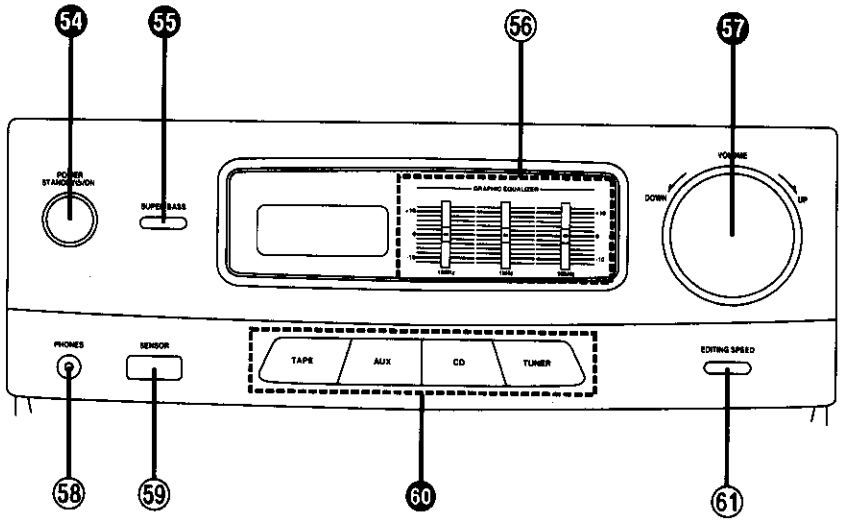
(51) Memory indicator (MEMORY)
Lights when the memory button is pressed.

(52) Volume level indicator (VOLUME)
Shows the volume level.

Front Panel Controls and Functions

(continued)





Amplifier section

54 Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

55 Super bass button (SUPER BASS)
Press to boost the low-frequency ranges.

56 Equalizer controls (GRAPHIC EQUALIZER)
Use to adjust the equalization level.
These controls are for compensation of tonal quality. By sliding the controls at each of the indicated frequencies in the "+" direction, the tonal quality is increased, and by sliding them in the "−" direction, the tonal quality is decreased.

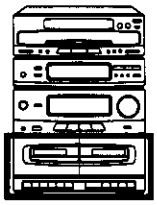
57 Volume level control (VOLUME)
Turn to adjust the volume level.
When turning the control, the alpha-numeric display shows the volume level.
Note that −− dB is the lowest volume setting and 0 dB is the highest.

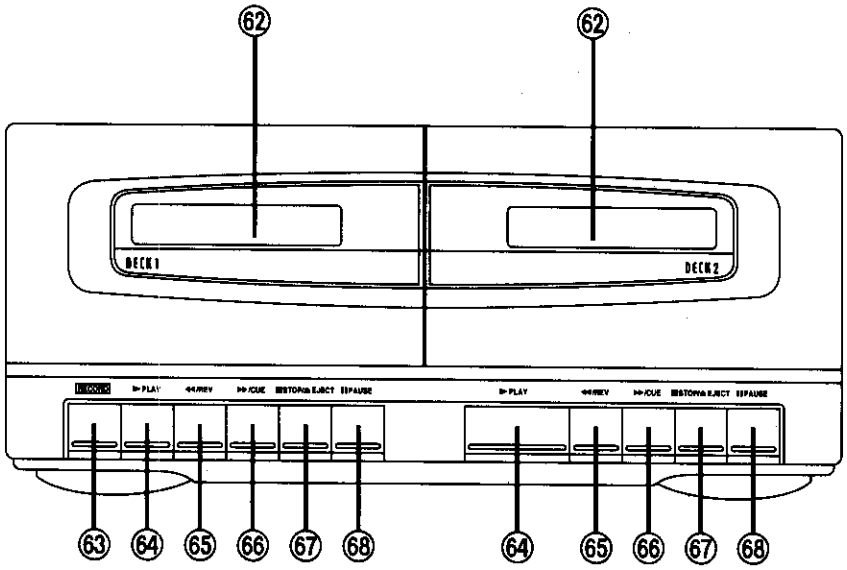
58 Headphones jack (PHONES)
Plug headphones cord into this jack.

59 Remote control signal sensor (SENSOR)
Receives the signals from the remote control.

60 Input select buttons (TAPE, AUX, CD, TUNER)
Press to select the sound source.

61 Tape-to-tape recording speed selector (EDITING SPEED)
Press to select the recording speed when a tape-to-tape recording is made.





Cassette deck section

⑫ Cassette holders

⑬ Record button (RECORD)
Press to make a recording (tape deck 1 only).

⑭ Playback buttons (▶ PLAY)
Press to play back a tape.

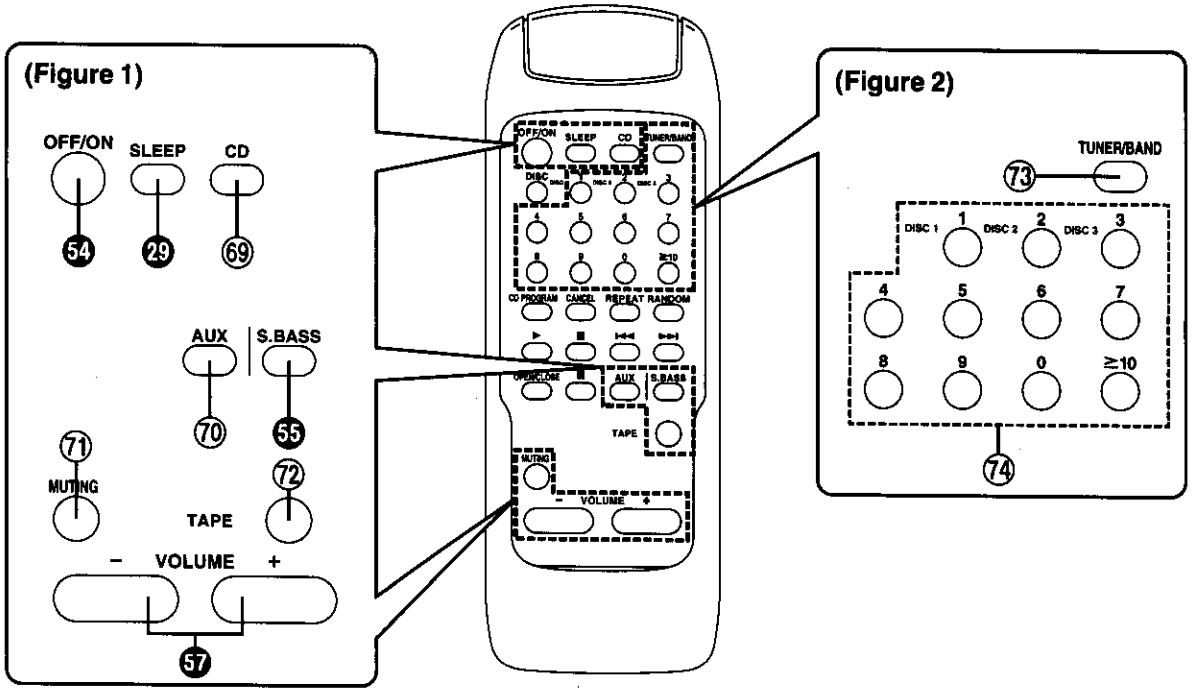
⑮ Rewind/review buttons (◀◀/REV)
Press to rewind the tape.
Press and hold during playback to review the contents at high speed.

⑯ Fast forward/cue buttons (▶▶/CUE)
Press to advance the tape.
Press and hold during playback to cue the contents at high speed.

⑰ Stop/eject buttons (■ STOP/▲ EJECT)
Press to open the cassette holder, or to stop the tape.

⑱ Pause buttons (❚❚ PAUSE)
Press to temporarily stop the tape playback or recording (deck 1 only).

Remote Control Unit Controls and Functions



Common operation controls (Figure 1)

The functions of buttons ㉙, ㊹, ㊺ and ㊼ are identical to those described under "Tuner section" on page 10 and "Amplifier section" on page 12.

㊾ CD input select button (CD)
Press to select the CD source.

㊿ AUX input select button (AUX)
Press to select the external source.

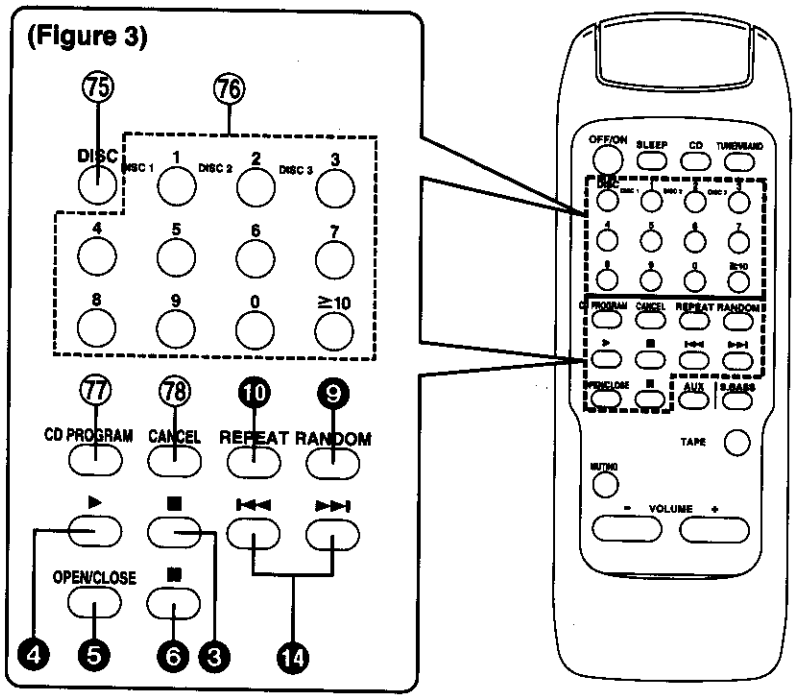
(71) Muting button (MUTING)
Press to temporarily mute the volume level.

(72) Tape input select button (TAPE)
Press to select the tape source.

Tuner controls (Figure 2)

(73) Tuner input /band select button (TUNER/BAND)
Use to select tuner source and desired band (FM or AM).

(74) Preset-tuning buttons
Use to tune to broadcast stations which have been preset in the unit's memory.



Compact disc controls (Figure 3)

The functions of buttons ❸, ❹, ❺, ❻, ❾, ❿ and ⓮ are identical to those described under "Compact disc changer section" on page 8.

⑮ Disc button (DISC)

Press this button before selecting the disc number (DISC 1–DISC 3) on the numeric buttons.

⑯ Numeric buttons

Use to select one track on a compact disc or when selecting which disc (1–3) you want to play.

⑰ Program button (CD PROGRAM)

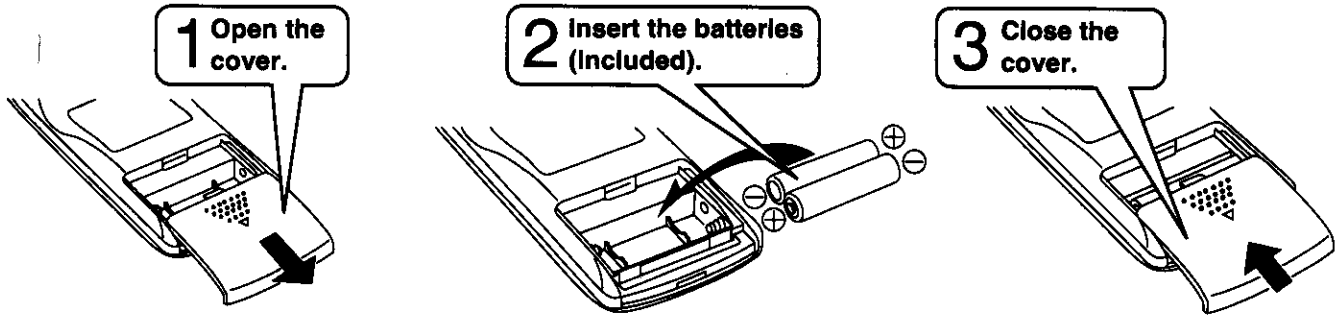
Press to activate the program play mode. You can then enter specific tracks using the numeric buttons.

⑱ Cancel button (CANCEL)

Press to cancel the programmed track.

Concerning the Remote Control

Battery installation



1 Open the cover.
Press gently and slide the cover out.

2 Insert the batteries included with this system.
When you need to replace these batteries, use two UM-4 "AAA", IEC R03 (1.5 V) or equivalent batteries.

Be sure that you insert the batteries so that their positive (+) and negative (−) polarities match the polarities indicated in the compartment. Batteries installed incorrectly may leak and cause damage.

Refer to "Use of batteries" for additional information.

3 Close the cover.

Use of batteries

Do not mix old and new batteries or batteries of different types (carbon and alkaline, etc.).

The average battery life is about one year. Although the battery life varies depending on how often the device is used, you should generally replace the batteries about once a year.

Replace the batteries if commands from the remote control transmitter do not operate the unit even when the transmitter is held close to the front panel.

Never subject batteries to excessive heat or flame; do not attempt to disassemble them; and be sure they are not short-circuited.

If you will not be using the remote control for a long period of time, remove the batteries and store them in a cool, dark place.

If a battery leaks, remove all batteries and dispose of them properly. Thoroughly clean the battery compartment before inserting new batteries.
If the leaking electrolyte comes into contact with skin or clothes, flush with water immediately.

Keep batteries out of the reach of children.

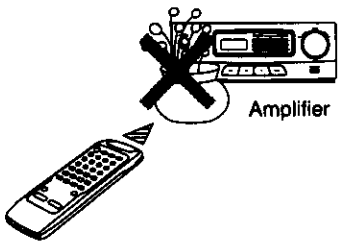
Do not use rechargeable-type (nickel-cadmium) batteries.

Do not attempt to recharge alkaline or carbon batteries.

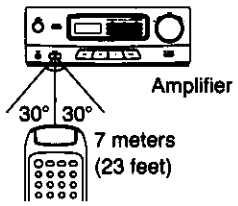
Always remove old, weak, or worn-out batteries promptly and dispose of them properly.

Do not dispose of used batteries in household rubbish.

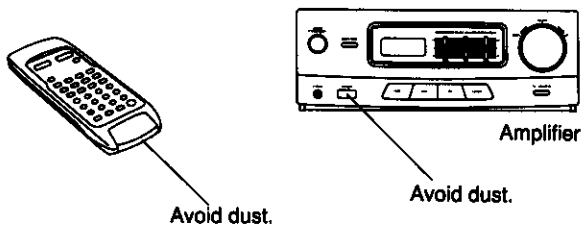
Operation notes



Aim the remote control transmission window toward the amplifier's sensor. Avoid any obstacles.



Use the remote control within a 60-degree angle of the amplifier. The maximum distance is within 7 meters (23 feet) directly facing toward the amplifier.

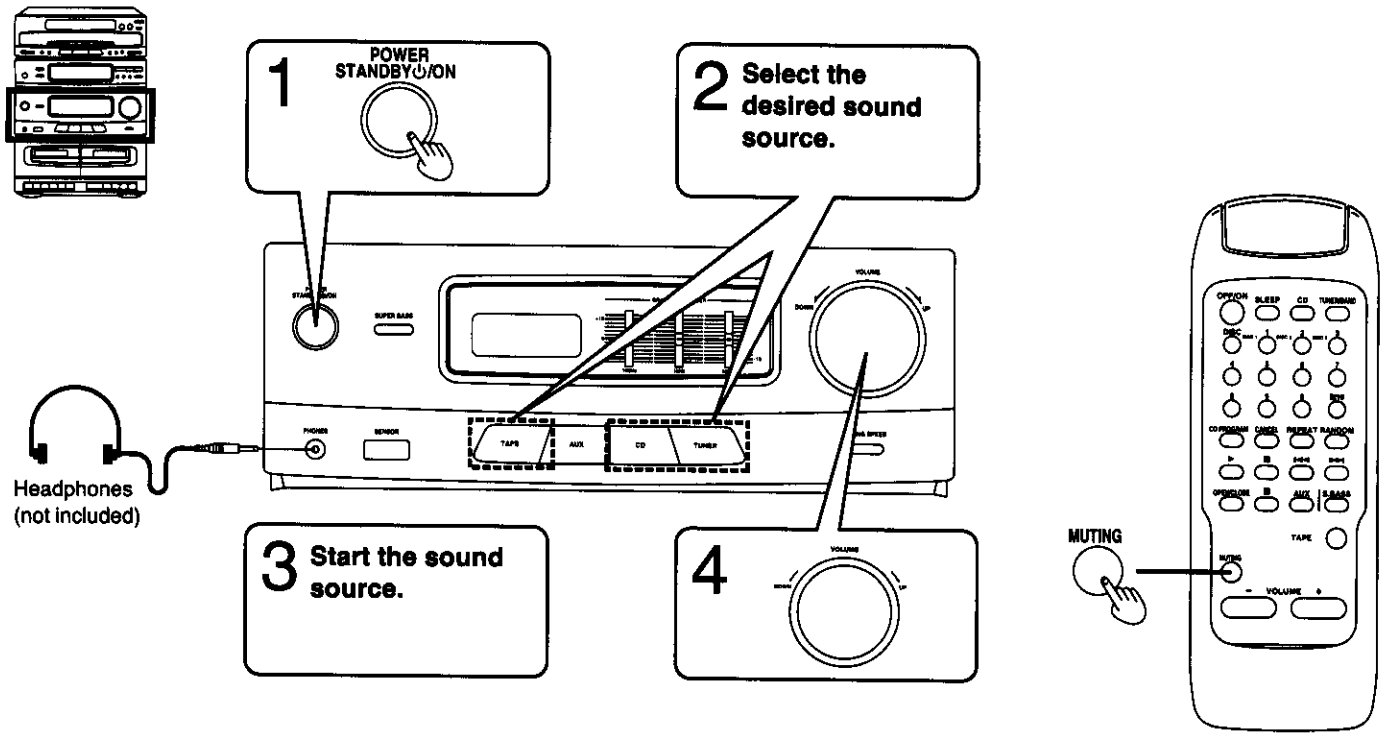


Be sure the transmission window and the amplifier's sensor are free from dust. Excessive dust might prevent reception.

If direct sunlight or other strong light source strikes the remote control signal sensor part of the amplifier, it may impair the remote control's operation. If there is a problem, move the amplifier away from the light source.

If this system is installed in a rack with glass doors, the glass doors' thickness or color might make it necessary to use the remote-control transmitter at a shorter distance from the system.

Basic Operating Procedure



1 **Press POWER STANDBY ⏻ /ON to switch on the power.**

2 **Select the sound source by pressing TAPE, CD or TUNER.**
The display panel will show which source has been selected.

3 **Start the sound source.**

4 **Adjust the volume level.**

Note:
Before you set the system to the standby mode, be sure to reduce the volume level to prevent the extremely high output from the amplifier from damaging the speakers.

How to mute the volume

Press MUTING on the remote control.

MUTING

The muting indicator appears on the display.
This lowers the volume level by 20 dB (approximately 1/10).

To cancel, press MUTING again or reduce the volume level to the minimum position and then reset to the desired volume.

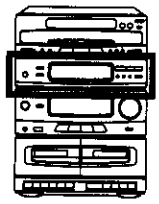
How to use headphones (not included)

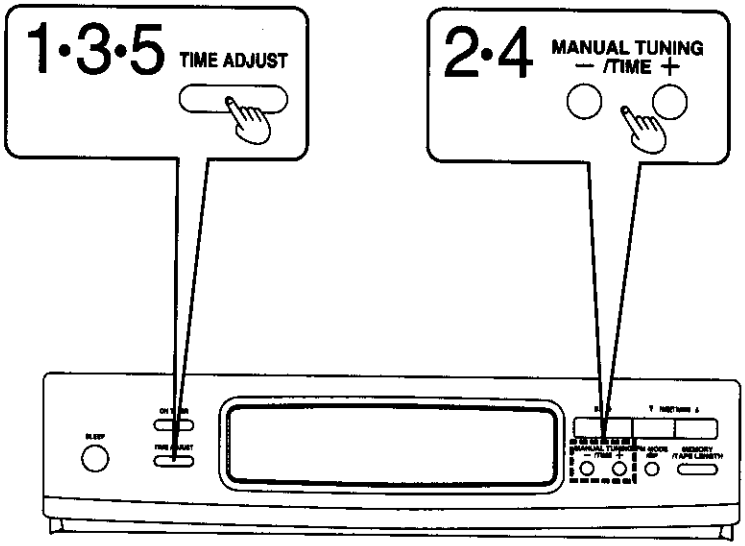
Reduce the volume level.
Connect the headphones to the headphones jack.
When you connect the headphones, the speakers will automatically be cut off.

Avoid listening for prolonged periods of time to prevent hearing damage.

Plug type: Stereo mini

Setting the Time of Day

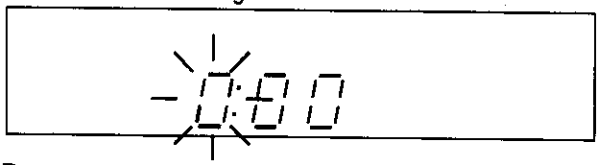




These instructions explain how to set the time for 18:20.

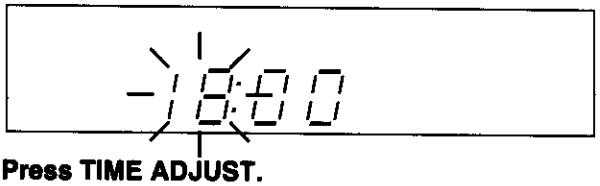
Switch on the power.

1 Press TIME ADJUST twice.
The hour will start flashing.

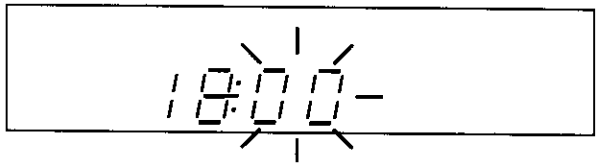


2 Press TIME + or TIME – until the correct hour appears on the display.

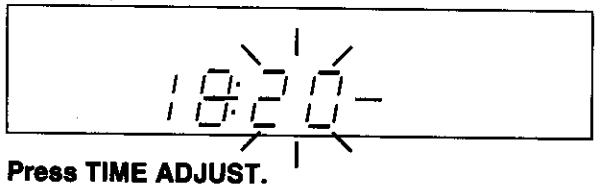
TIME +: To advance the time
TIME –: To reverse the time



3 Press TIME ADJUST.
The hour will stop flashing and then minute will begin to flash.



4 Press TIME + or TIME – until the correct minute appears on the display.
Going from 59 to 00 on the minute display will not change the hour display.

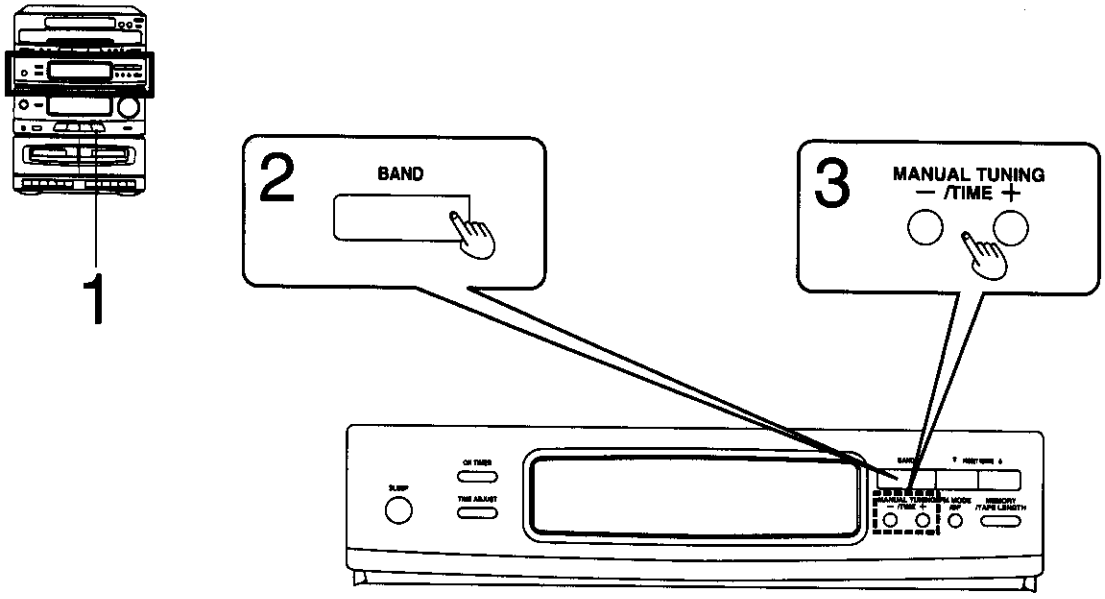


5 Press TIME ADJUST.
The minute will stop flashing.

The clock will be reset to "0" seconds.

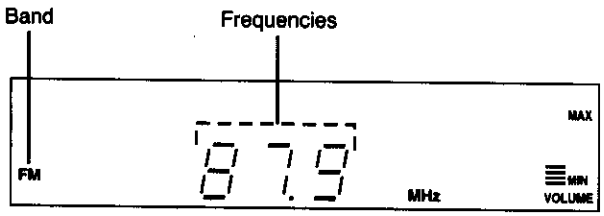
Listening to Radio Broadcasts

Manual tuner operation



1 Press the TUNER input select button.

2 Press BAND to select FM or AM.
The display will show which band you selected.



3 Press MANUAL TUNING + or MANUAL TUNING — to tune in the desired broadcast.
Press momentarily until the desired frequency appears in the display.

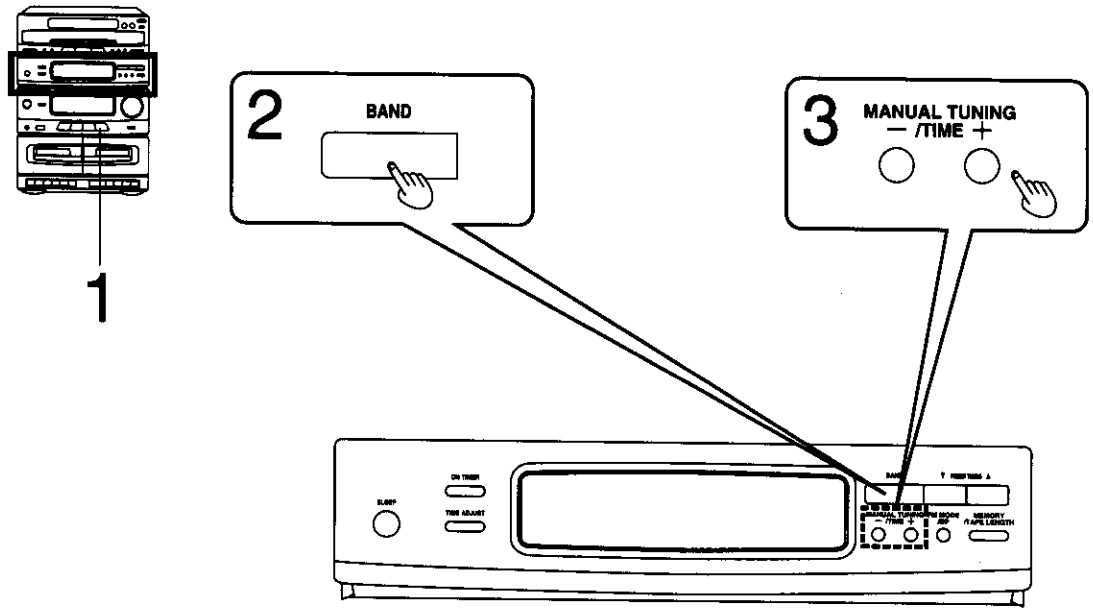
If you have tuned in an FM stereo broadcast, the FM stereo indicator will appear.

Listening to Radio Broadcasts

(continued)

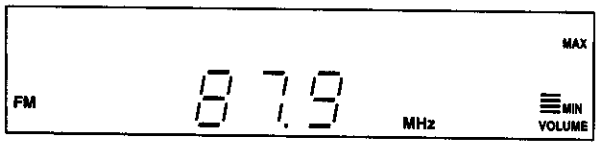
Automatic tuner operation only for FM

For FM broadcasting stations (but not AM), you can automatically tune in the station.



1 Press the TUNER input select button.

2 Press BAND to select FM.



3 Press and hold MANUAL TUNING + or MANUAL TUNING −, then release when the displayed frequency begins to change.

+: For higher frequencies
−: For lower frequencies

Once a station is tuned in, the frequency will stop changing.

To cancel the automatic tuner operation:

Press either MANUAL TUNING + or MANUAL TUNING − again.

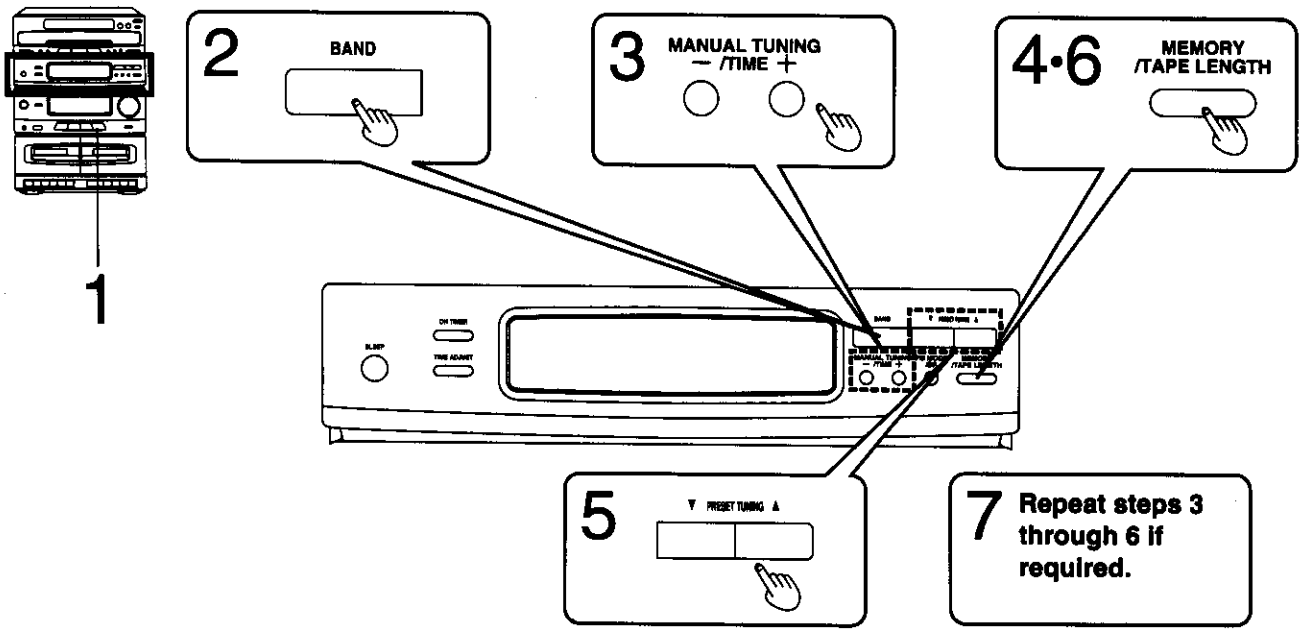
Note:

When there is excessive interference, the automatic tuner function may not function.

Memory presetting

If you want to preset broadcast frequencies, you can input them into the unit's memory. You can easily recall any of those broadcast frequencies by pressing one of the preset-tuning buttons on the remote control or by using the preset button (PRESET TUNING).

You can input up to 24 radio stations (12 FM and 12 AM) into the tuner's memory.
(When you input a new frequency on a preset channel, the previous setting for that channel is automatically cancelled.)

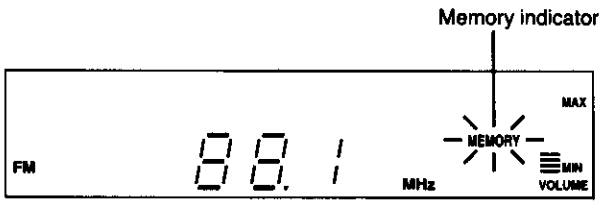


1 Press the TUNER input select button.

2 Press BAND to select FM or AM.

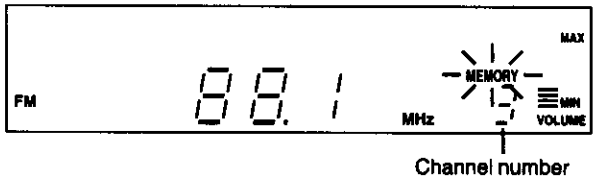
3 Tune in your favorite station.
Press MANUAL TUNING until the correct frequency appear on the display.

4 Press MEMORY to activate the memory indicator.
The memory indicator will flash.



5 Press ▼ PRESET TUNING or PRESET TUNING ▲ to select the desired preset channel while the memory indicator is flashing.

PRESET TUNING ▲: Press to increase (from 1 to 12).
▼ PRESET TUNING: Press to decrease (from 12 to 1).



6 Press MEMORY.
The memory indicator will go off.

7 Repeat steps 3 through 6 to program station for each of the remaining channels.

Most-recent-memory

The most-recent-memory system remembers the broadcast station last tuned to when you switched the power to standby mode or selected another function. When you switch the tuner back on, the last station you tuned to will automatically come on.

The programmed frequencies will remain in the unit's memory for approximately 2 weeks, even if there is an interruption.

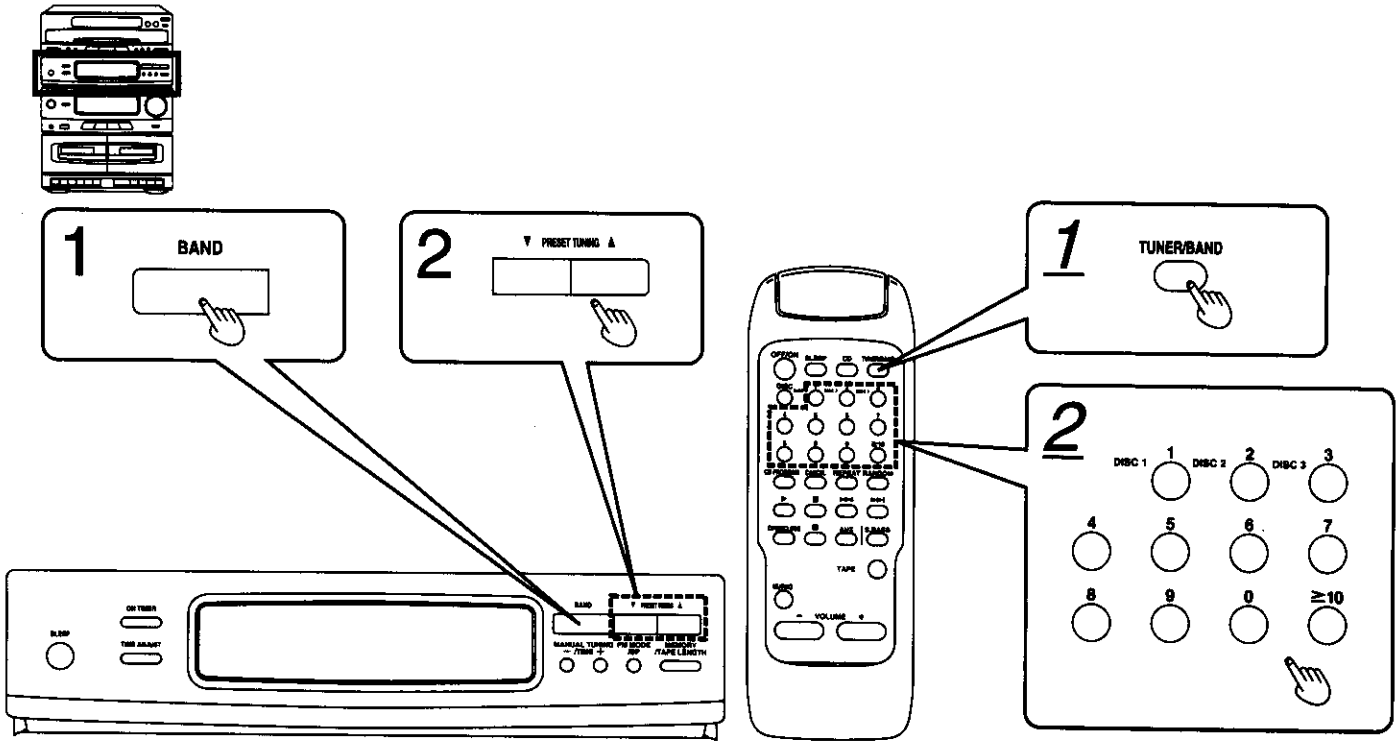
Listening to Radio Broadcasts

(continued)

Memory tuner operation

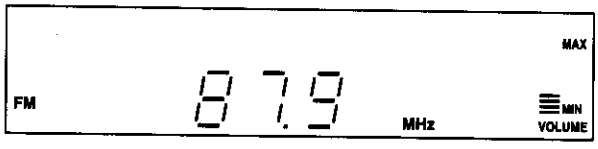
(To listen to broadcast stations which have been programmed into the unit's memory)

Switch on the power and be sure you've completed the steps for "Memory presetting" on page 21.

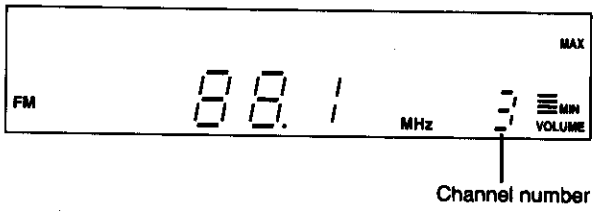


From the main unit

1 Press BAND to select FM or AM.
AM and FM indicators will appear in turn.



2 Press ▼ PRESET TUNING or PRESET TUNING ▲ to select the desired preset channel.
The selected channel number will appear on the display.



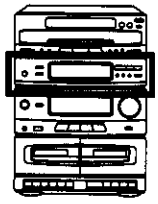
From the remote control

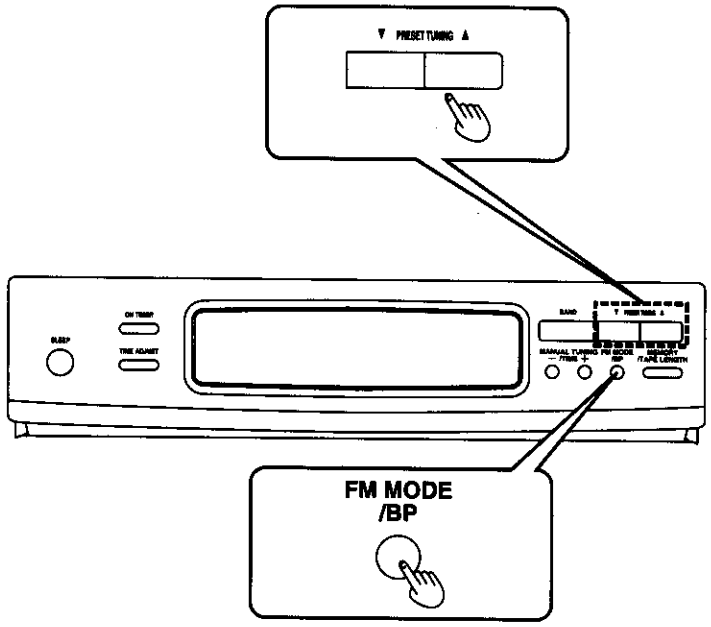
1 Press TUNER/BAND to select FM or AM.

2 Press the numeric button corresponding to the preset channel you wish to tune in.

To select a preset channel between 1 and 9:
Press the appropriate preset-tuning button 1–9 directly.
To select a two-digit preset channel:
First press ≧10 and then a numeric button 1 to select the "tens" digit. Then press one of the buttons from 0 to 2 to select the "unit" digit.

For example:
Preset channel 12: ≧10-1-2



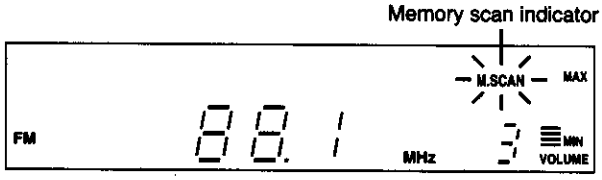


Memory scanning

This feature is convenient when trying to locate a certain broadcast, or to monitor each station briefly.
Each frequency can be heard (in sequence) for about 5 seconds.

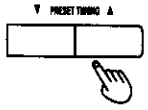
Press ▼ PRESET TUNING or PRESET TUNING ▲, then release when the frequency display begins to change.
The memory scan indicator will flash.

PRESET TUNING ▲: For higher channel
▼ PRESET TUNING: For lower channel



When the broadcast you want to listen to is found

Press ▼ PRESET TUNING or PRESET TUNING ▲.



The broadcast will continue even after 5 seconds.

If noise is excessive in the FM mode

Press FM MODE/BP to monaural position.

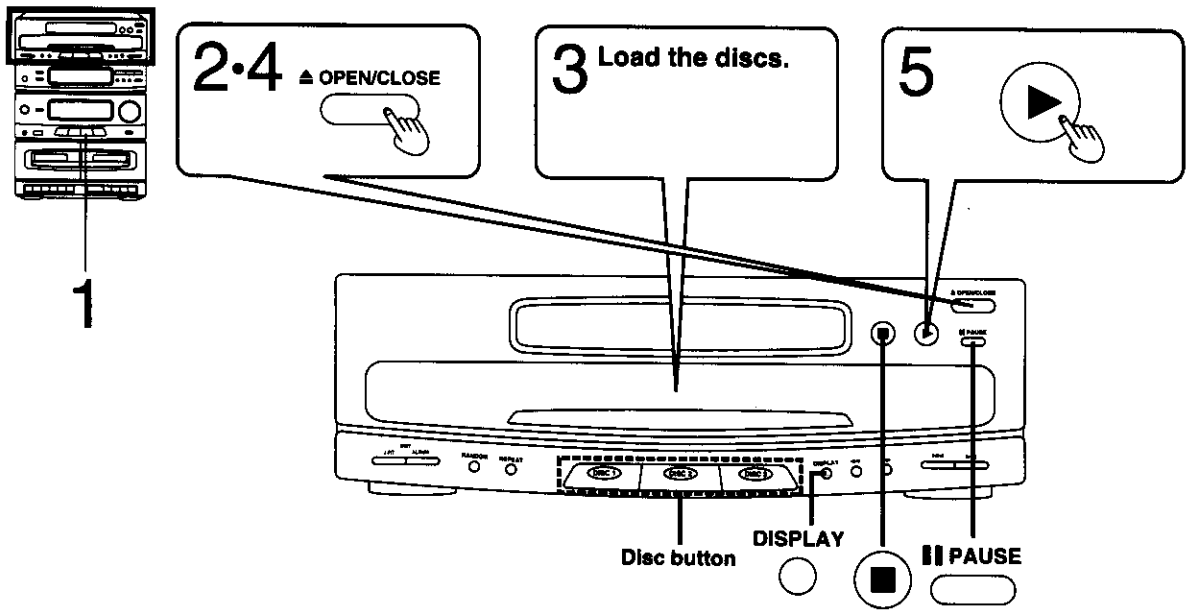
FM MODE
/BP

The FM stereo indicator will go off, showing that the sound will then be heard in monaural. If the broadcast signal is weak, or if there is a large amount of interference, you will get a clearer sound using the FM MODE/BP button.

Listening to Compact Discs

Sequential play

Sequential play refers to play all tracks on the loaded discs in sequence beginning with the first track on the disc in playing position.



(Also available from the remote control)

1 Press the CD input select button.

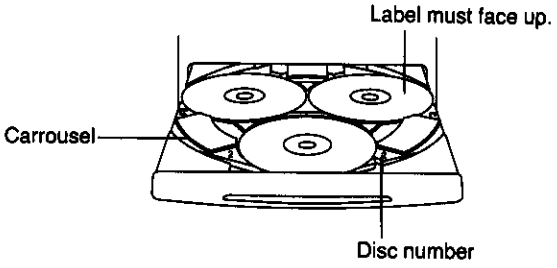
2 Press OPEN/CLOSE to open the loading drawer.

3 Load the disc(s) on the disc tray(s).

Do not load 8 cm and 12 cm discs on the same disc tray.

Be sure to load a 8 cm disc correctly at center position.

The number (1–3) on the disc tray indicates the disc number.



4 Press OPEN/CLOSE again to close the loading drawer.

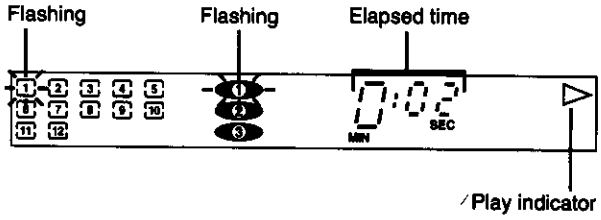
You can skip this step by pressing the CD play button.
The loading drawer will close automatically, and play will start.

Do not attempt to close the drawer by hand. Be sure to press OPEN/CLOSE.

Note:
Do not touch the carrousel or the loading drawer while it is moving.
Do not turn the carrousel forcibly by hand because it may fail to operate normally.

5 Press the CD play button.

Disc play begins from the first track on disc 1.
You can specify which disc you want to play first by pressing the disc button (DISC 2 or DISC 3).
The disc indicator corresponding to the disc being played flashes.



The frames above and below the track currently playing will flash while the track is played and go out at the end of that track.

The changer will play all the tracks on all the discs in order and stop automatically when the last track on the last disc finishes playing.

When there are 16 or more tracks on the disc, ➤ will appear.

Note:
If you press OPEN/CLOSE while the play indicator is lit, the drawer will open to half position.
To open fully, follow the procedure below.
① Press the stop button.
② Press OPEN/CLOSE to close the drawer.
③ Press OPEN/CLOSE again to open the drawer.

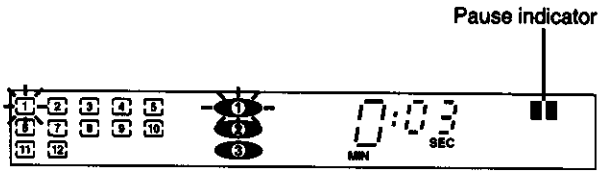
CAUTION:
Do not move this changer with a compact disc inside the unit. If a disc comes off the disc tray, it might be scratched or the changer might become incapable of playing.

To temporarily stop the disc play

(Also available from the remote control)

Press the pause button.

II PAUSE



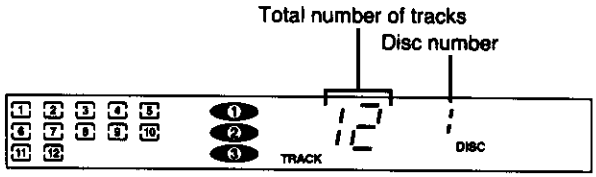
The pause indicator will appear.

Press the pause button again or the CD play button, to resume play.

To stop the disc play

(Also available from the remote control)

Press the stop button.

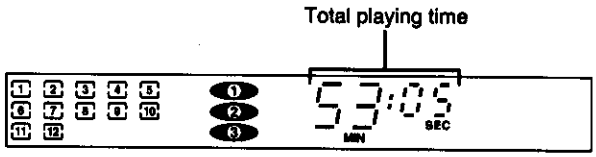


The changer switches to the stop mode and the indication for total number of tracks and disc number will appear.

To confirm the total playing time of the disc currently in playing position

In stop mode
Press DISPLAY.

DISPLAY

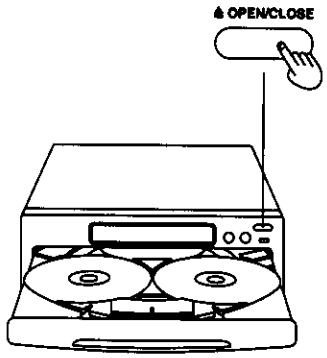


To exchange discs during play

You can exchange the other discs while a disc is playing.

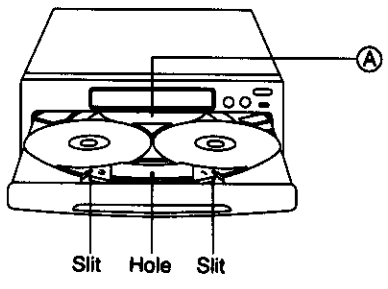
① Press OPEN/CLOSE during playing.
(Also available from the remote control)
The loading drawer will open at half position.
② Exchange the discs.
③ Press OPEN/CLOSE again to close the loading drawer.
(Also available from the remote control)

Note:
If you play a disc with the loading drawer open, the changer will automatically stop when the last track on the current disc finishes playing.



Notes:
Do not cover the hole or slits indicated on the right.
Otherwise the incorrect operation will take place.

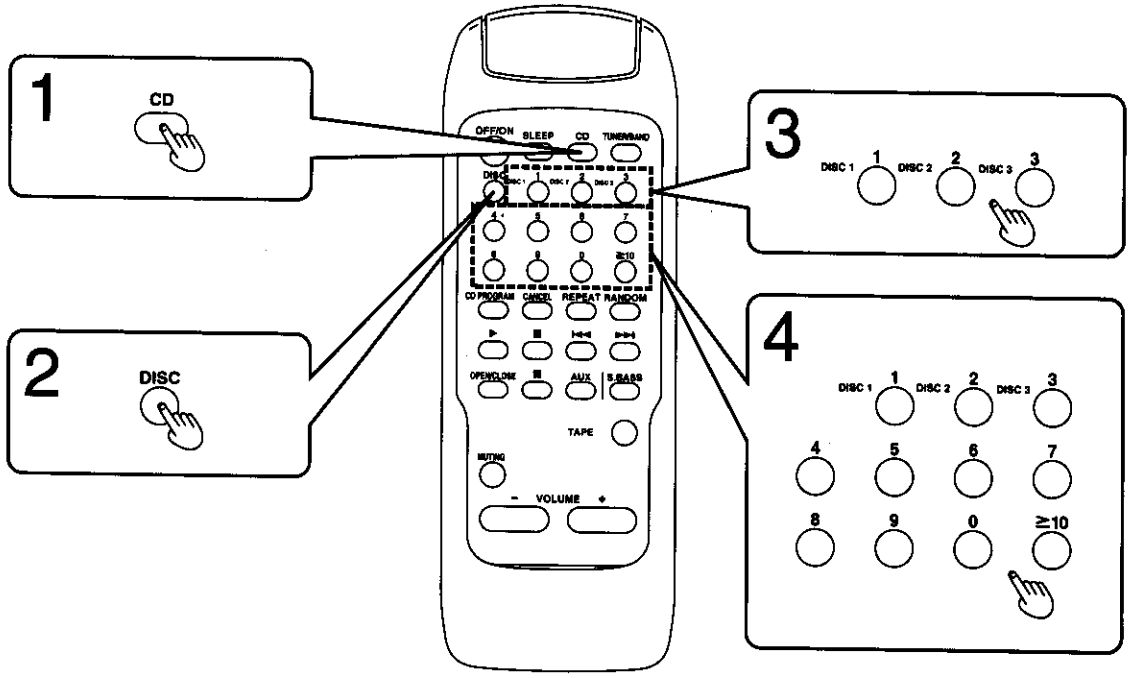
Do not insert another disc onto tray Ⓐ, although the tray is partially showing, its disc is in the play position.



Listening to Compact Discs (continued)

Direct access play

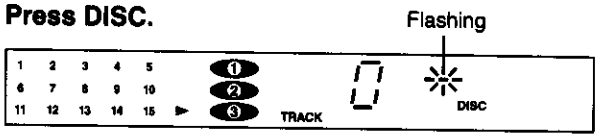
(Only from the remote control)
Direct access allows you to start sequential play from a specific track on a specific disc and to play all discs loaded in sequence.



If you want to start with the disc currently in playing position, proceed to step 4.

1 Press the CD input select button.

2 Press DISC.



3 Press one of the numeric buttons (1–3) to specify which disc contains the track you wish to play.

If you don't proceed to step 4, play will begin with the first track of the selected disc and continue to the end of the disc.

4 Press the numeric buttons to specify the desired track number.

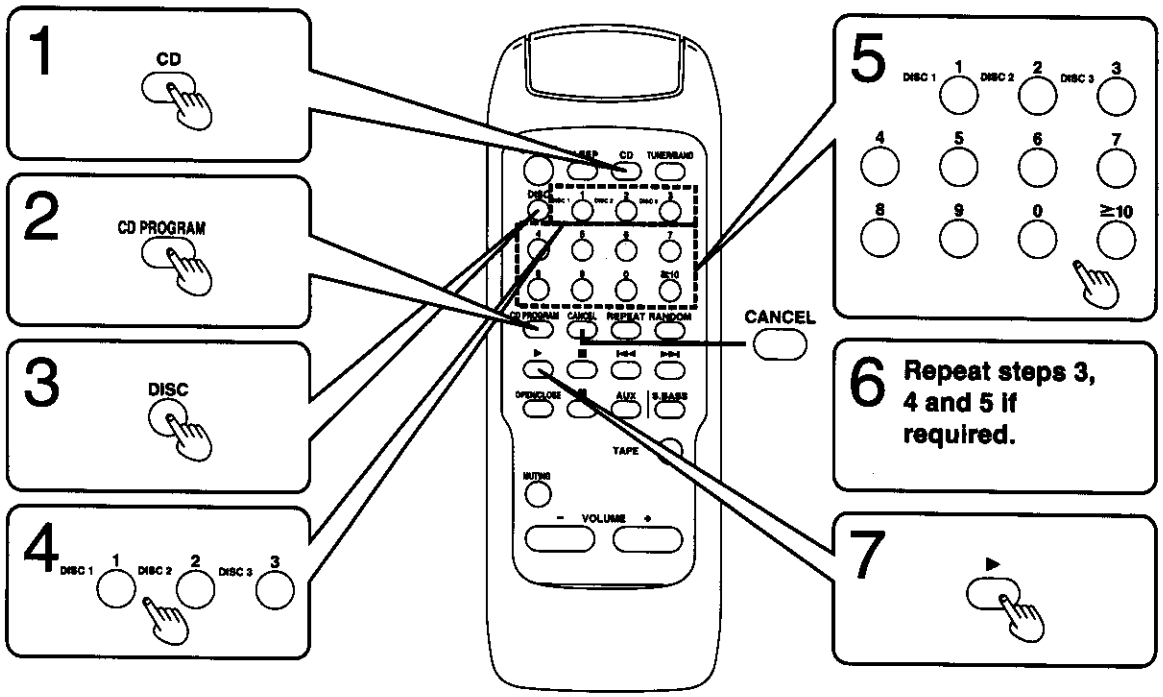
To select a track between 1 and 9:
Press the appropriate numeric button 1–9 directly.
To select a two-digit track:
First press ≥10 and then a numeric button 1–9 to select the "tens" digit. Then press one of the buttons from 0 to 9 to select the "unit" digit.
For example:
Track no. **13**; [≥10]-[1]-[3]
Track no. **20**; [≥10]-[2]-[0]
Track no. **35**; [≥10]-[3]-[5]

Play begins with the track selected and continues to the end of the last disc.

The changer will stop automatically when the last track on the last disc finishes playing.

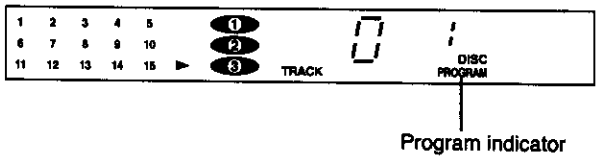
Program play

(Only from the remote control)
This function allows you to program up to 20 tracks from the loaded discs in any order you choose.



1 Press the CD input select button.

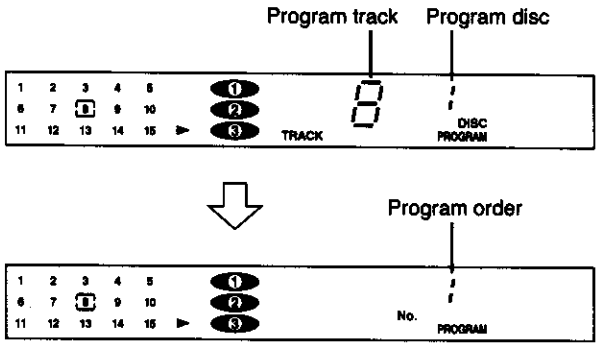
2 Press CD PROGRAM.
The program indicator will appear on the display.



3 Press DISC.

4 Press one of the numeric buttons (1–3) to specify which disc contains the track you wish to play.

5 Press the numeric buttons to specify which track you want to play.



To select a track between 1 and 9:
Press the appropriate numeric button 1–9 directly.
To select a two-digit track:
First press ≧10 and then a numeric button 1–9 to select the "tens" digit. Then press one of the buttons from 0 to 9 to select the "unit" digit.
For example:
Track no. **13**; ≧10-1-3
Track no. **20**; ≧10-2-0

Notes:
"F" will appear on the display if you try to program more than 20 tracks.

If you enter non-existing disc(s) or track(s) soon after the loading drawer is closed or when it is open, the corresponding indicator illuminates and the entry is included in the program count. In the play mode, the changer will cancel the non-existing entry and play the subsequent programmed disc or track.

6 Repeat steps 3, 4 and 5 until you have completed the program.

7 Press the CD play button.
Play will begin from the first track you programmed.

Listening to Compact Discs (continued)

To clear a programmed track

1. **Press CANCEL in the stop mode.**
   CANCEL indicator will light.
2. **Specify which track is to be cancelled.**
   ① Press DISC.
   ② Press a numeric button (1–3) to specify which disc contains the track you want to cancel.
   ③ Press a numeric button corresponding to the track you want to cancel.
3. **Repeat step 2 if required.**
4. **Press CANCEL again.**
   CANCEL indicator will go out.

To add an entry

You can add an entry in the play or stop mode.

Press a numeric button to show which track is to be added.

① Press DISC.
② Press a numeric button (1–3) to specify which disc contains the track you want to add.
③ Press a numeric button corresponding to the track you want to add.

To cancel program play

Press CD PROGRAM to go off the program indicator.
When pressed in the play mode, sequential play will resume.

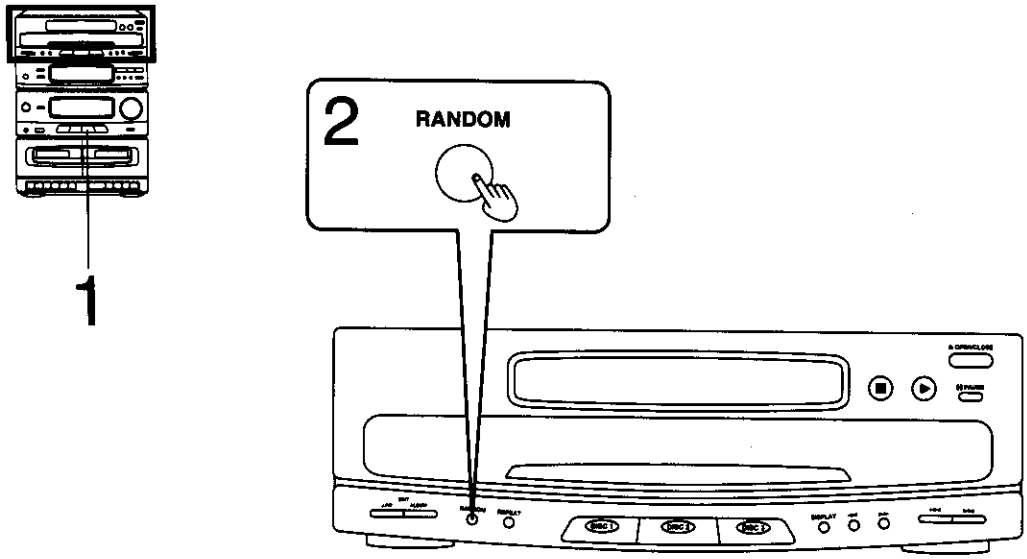
Note:
When you press OPEN/CLOSE to open the disc drawer or press the stop button in the stop mode, all the program is cancelled.

Program memory function

The unit's memory will retain the programmed sequence until you cancel it by opening the compact disc drawer or by pressing the stop button in the stop mode. The sequence will remain in the unit's memory for approximately 2 weeks.

Random play

The microcomputer will automatically select a sequence of tracks to be played from all of the loaded discs in an "exclusive random" manner. (No tracks will be repeated.)

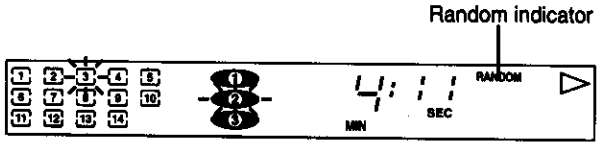


(Also available from the remote control)

1 **Press the CD input select button.**

2 **Press RANDOM.**

The random indicator will appear on the display, and random play will start.



The changer will stop automatically when all the tracks on all the loaded discs have been played.

The changer will randomly choose a track from a randomly selected disc. Once the changer has played the selected track, it will make another selections at random, excluding the tracks already played.

To cancel random play

(Also available from the remote control)

Press RANDOM once again to end random play.

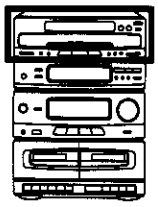
RANDOM

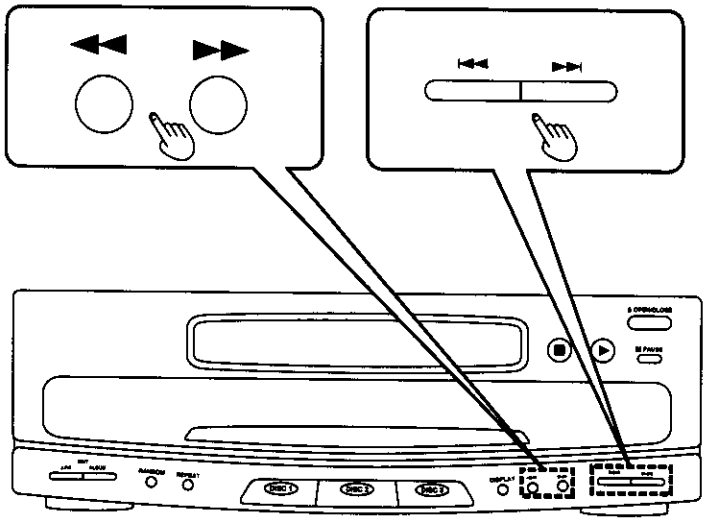
The random indicator on the display will go off.

The changer returns to sequential play mode from the current track on the current disc which is playing.

Listening to Compact Discs (continued)

Special features





Search function

You can search rapidly forward or backward on the disc for specific sections.

While in the play mode, press and hold either ◀◀ or ▶▶ (search button). Release the button when you have reached the desired point.

▶▶: You can search forward.
◀◀: You can search backward.

At first, the search is at slow speed, and then becomes more rapid if the button is held down.

The volume level will drop to about 1/4 of normal.

In program and random play modes:
A search will take place only within the track being played.

Skip function

(Also available from the remote control)

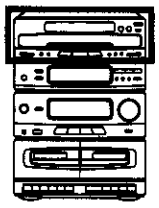
Press either ⏮ or ⏭ (skip button) until you reach the desired track.

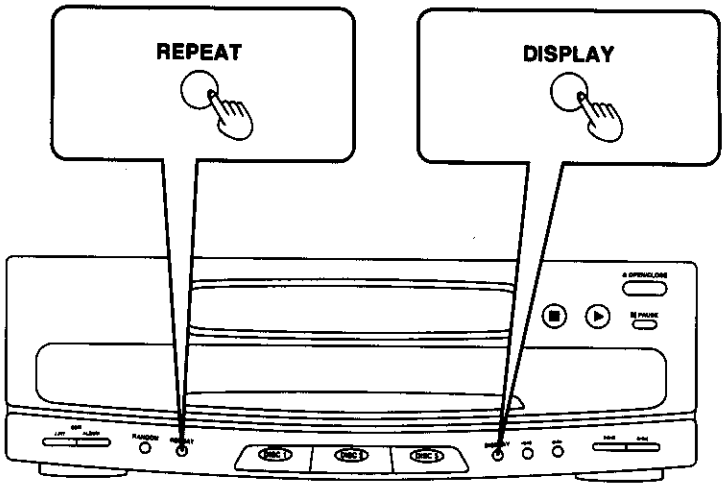
⏭ : You can skip forward.
⏮ : You can skip backward.

In sequential play/program play mode:
⏭ : You can skip as many tracks as the number of times you press the button.
⏮ : You can skip back to the beginning of the track being played. If you press this button again quickly, you can skip to the beginning of the previous track.
Note that in a backward skip, the current track is included in the count.

In program play mode, you can skip only within the programmed tracks.

In random play mode:
⏭ : You can skip to the beginning of a next track on random manner.
⏮ : You can skip back to the beginning of the current track.





Repeat function

This function repeats the play of tracks on the loaded discs.

(Also available from the remote control)

Press REPEAT before or during play.

Repeat indicator will appear on the display.

Repeat indicator

In sequential play mode:
All tracks of all discs will be played repeatedly.

In program play mode:
The changer plays only the programmed tracks in the programmed sequence repeatedly.
You can enjoy the same track over and over if you press REPEAT when only one track is programmed.

In random play mode:
When the changer has played all the tracks on all the loaded discs, it will select a new random sequence and play continuously. The sequence differs each time.

To cancel repeat play:

Press REPEAT once again.

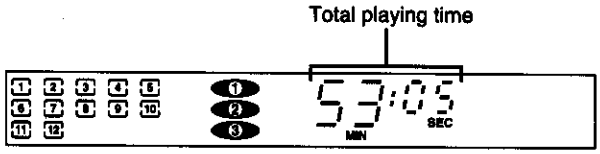
REPEAT

The repeat indicator on the display will go off.

Switching the display

In the stop mode
Press DISPLAY.

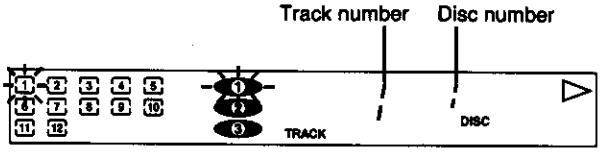
Total playing time



The display will change to show the total playing time of the disc in playing position.

In the play mode
Press DISPLAY.

Track number Disc number

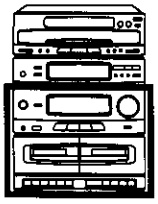


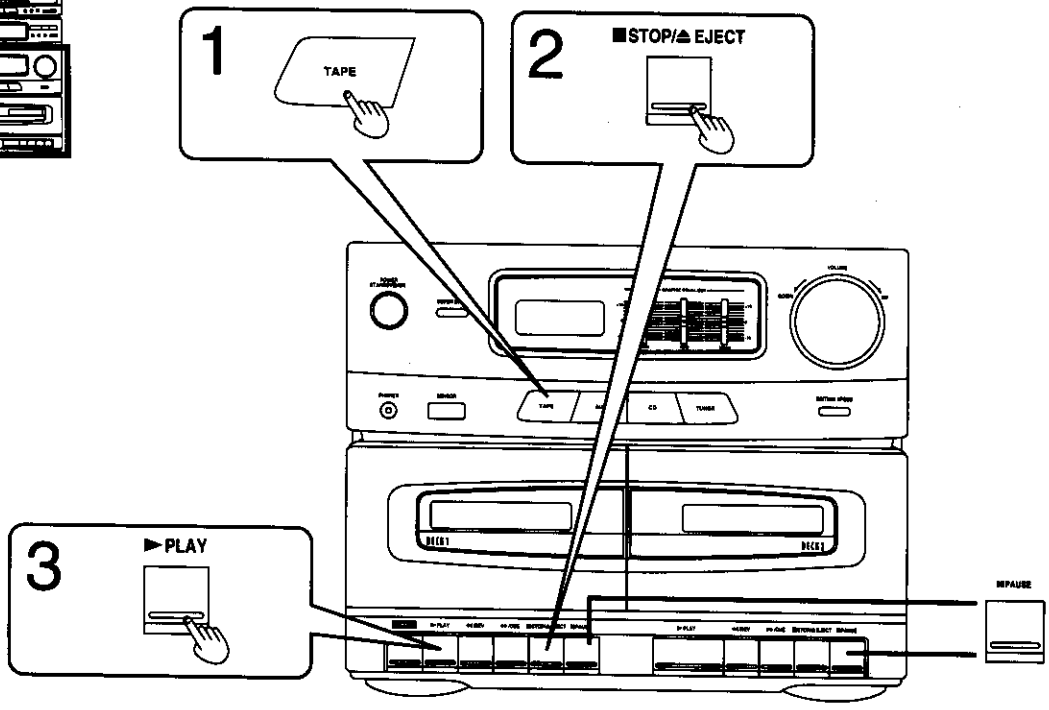
The display will change to show which track and which disc are currently playing.

Listening to Tapes

You can use either deck 1 or deck 2 for tape playback by following the same steps. (This page shows an example using deck1.)

To play back prerecorded cassettes





1 Press the TAPE input select button.

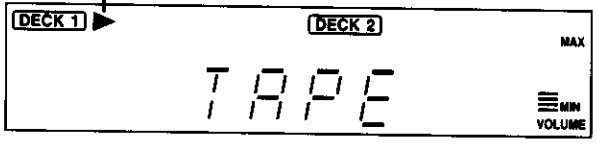
2 Press STOP/EJECT, and then load the cassette you wish to play.

The normal grade of tape is recommended.

Insert the cassette with the exposed tape facing down.

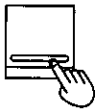
3 Press PLAY to start playback.

Tape travel indicator



To stop the tape

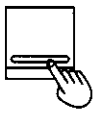
Press STOP/EJECT.
■STOP/⏏ EJECT



The playback will stop.

To briefly interrupt playback

Press PAUSE.
❚❚PAUSE

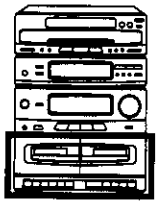


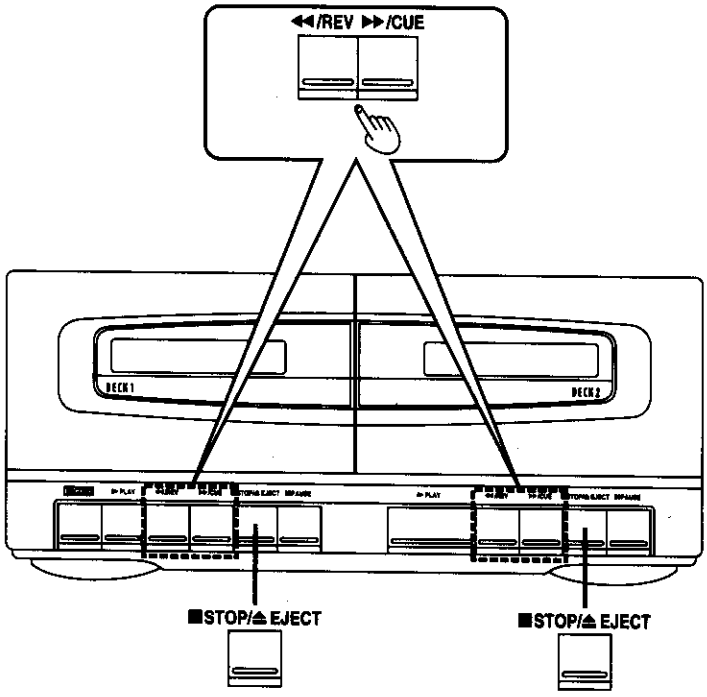
To resume playback, press PAUSE again.

Full auto-stop

When the tape reaches the end, the tape transport will automatically stop.

Listening to Tapes (continued)





To fast forward or rewind the tape

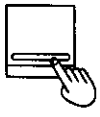
Press ▶▶/CUE or ◀◀/REV while the tape is stopped.

The tape will start moving at high speed.

To stop the fast forward or rewind operation

Press STOP/EJECT.

■STOP/⏏ EJECT

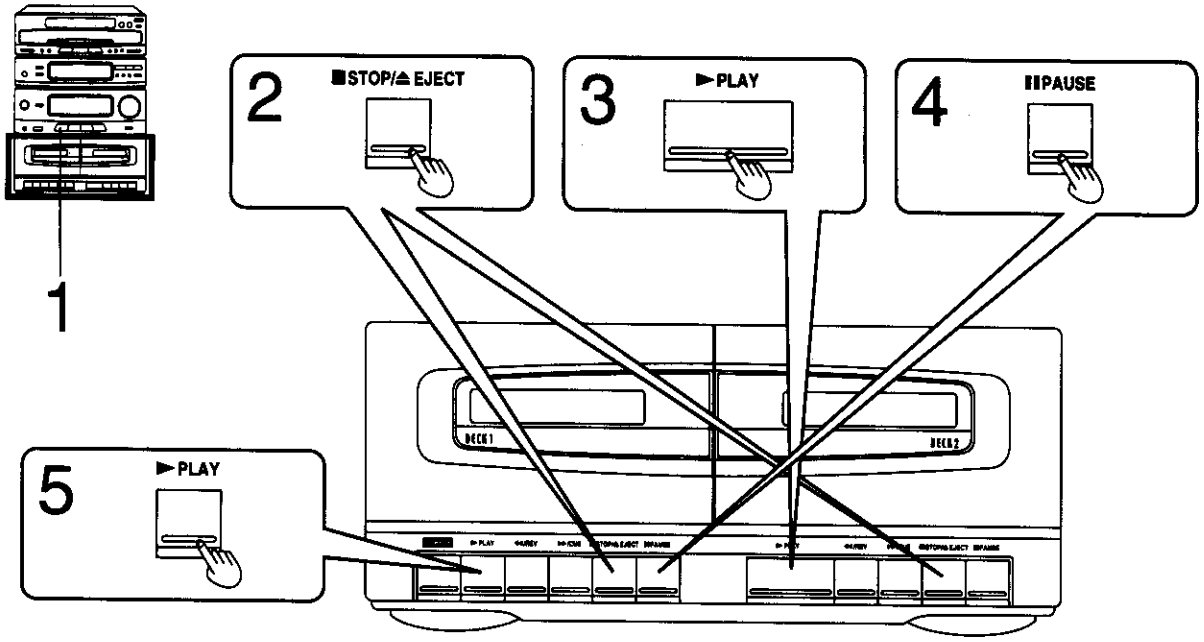


To cue or review the tape

During playback, press and hold ▶▶/CUE or ◀◀/REV.

The recorded sound on the tape can be monitored at high speed.

When the button is released, normal playback will resume.



Series playback

Series playback is the continuous playback of the side which faces toward you in both tape decks, from tape deck 2 to tape deck1.

1 **Press the TAPE input select button.**

2 **Press STOP/EJECT and load cassettes in decks 1 and 2.**
Load with the side that you wish to listen to first facing you in deck 2.

3 **Press PLAY on deck 2 to start deck 2 playback.**

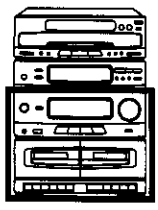
4 **Press PAUSE on deck 1.**

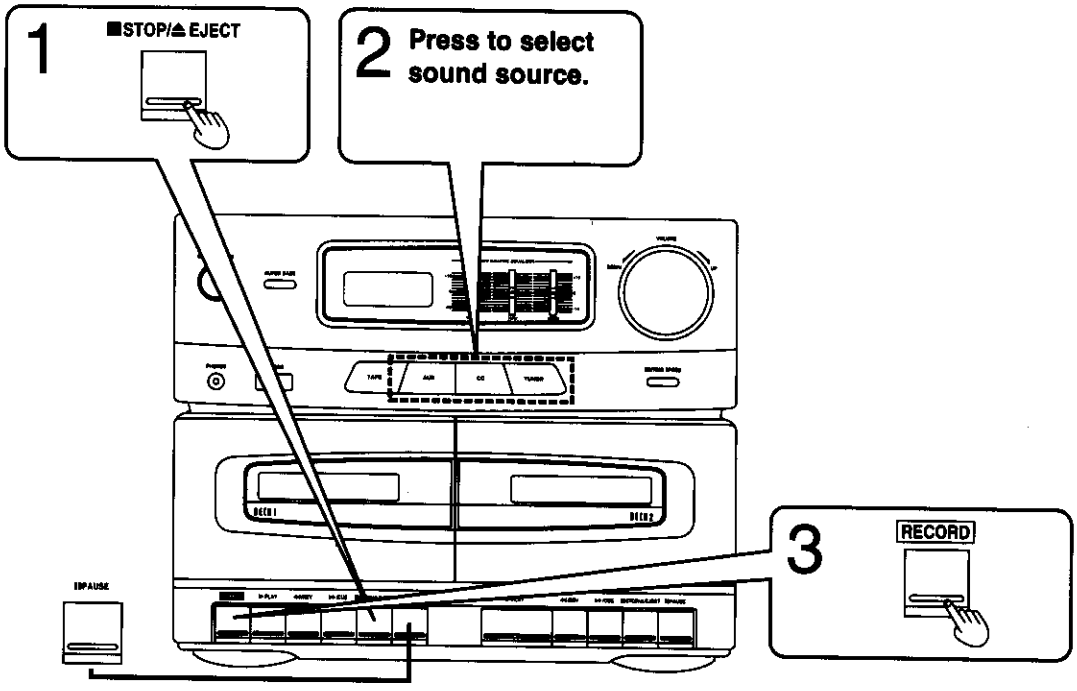
5 **Press PLAY on deck 1.**
The tape in deck 1 will begin playing after the tape in deck 2 finishes.
And tape deck 1 will stop at the end of the tape.

Making a Recording (Deck 1 only)

To record from the desired source

To make a tape-to-tape recording, see "Tape-to-Tape Recording" on page 38.





Switch on the power.

1 Press STOP/EJECT on deck 1 to load a cassette.

The normal grade of tape is recommended.

Check to see that the tape's erasure prevention tabs (see page 53) are intact, and then insert the cassette into deck 1.
You cannot record on the leader tape (the first few revolutions) so take up the leader tape in advance (See page 37.)

2 Press the input select button to select your desired sound source.

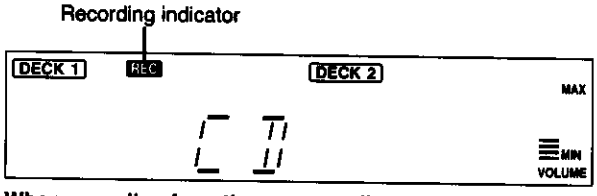
To record from the radio:
Press TUNER.
Then tune in the desired station. (See pages 19–23.)

To record from compact discs:
Press CD.

To record from the external unit:
Press AUX.

3 Press RECORD.

The recording will begin.
The unit has been set for the optimum recording level.



When recording from the compact discs:
After pressing RECORD, the cassette deck will automatically start the recording from the first track. **(Synchro start function)**
So you don't have to press the CD play button.

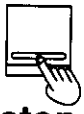
Note:
You can record programmed tracks from more than one disc (up to 3). The cassette deck will create a non-recorded passage of about 4 seconds each time that the CD changer changes discs.

Notes:
The graphic equalizer effects will not be recorded.

Do not use the input selectors while a recording is in progress, because the sound source will be changed.

To briefly interrupt recording

Press PAUSE on deck 1.
II PAUSE

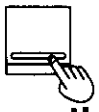


The cassette deck will return to the recording standby mode.

To resume recording, press PAUSE again.

To stop recording

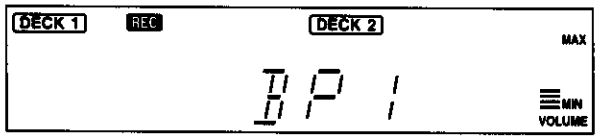
Press STOP/EJECT on deck 1.
■ STOP/⏏ EJECT

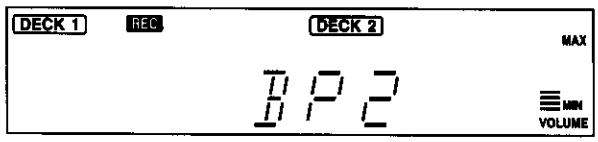


To use the beat proof function (AM broadcast only)

Press FM MODE/BP on the tuner.
FM MODE /BP

When recording an AM broadcast, use the beat proof button to reduce unwanted "beat" signals (whistle). Press the FM mode/beat proof button to whichever position (BP 1, or BP 2) best reduces these beat signals. The display will indicate which position is in effect.



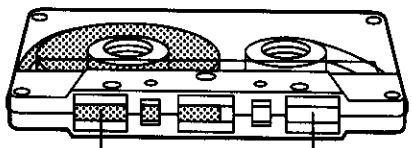


To erase a recorded tape (Deck 1)

When you make a new recording on a previously recorded tape, the new recording will automatically erase what was previously recorded. To erase a tape without making a new recording, follow the steps on the right.

1) **Press the TAPE input select button on the amplifier.**
2) **Insert the recorded tape into the cassette holder of deck 1.**
3) **Press RECORD.**

Concerning the leader tape



Magnetic tape
(recording can be made)

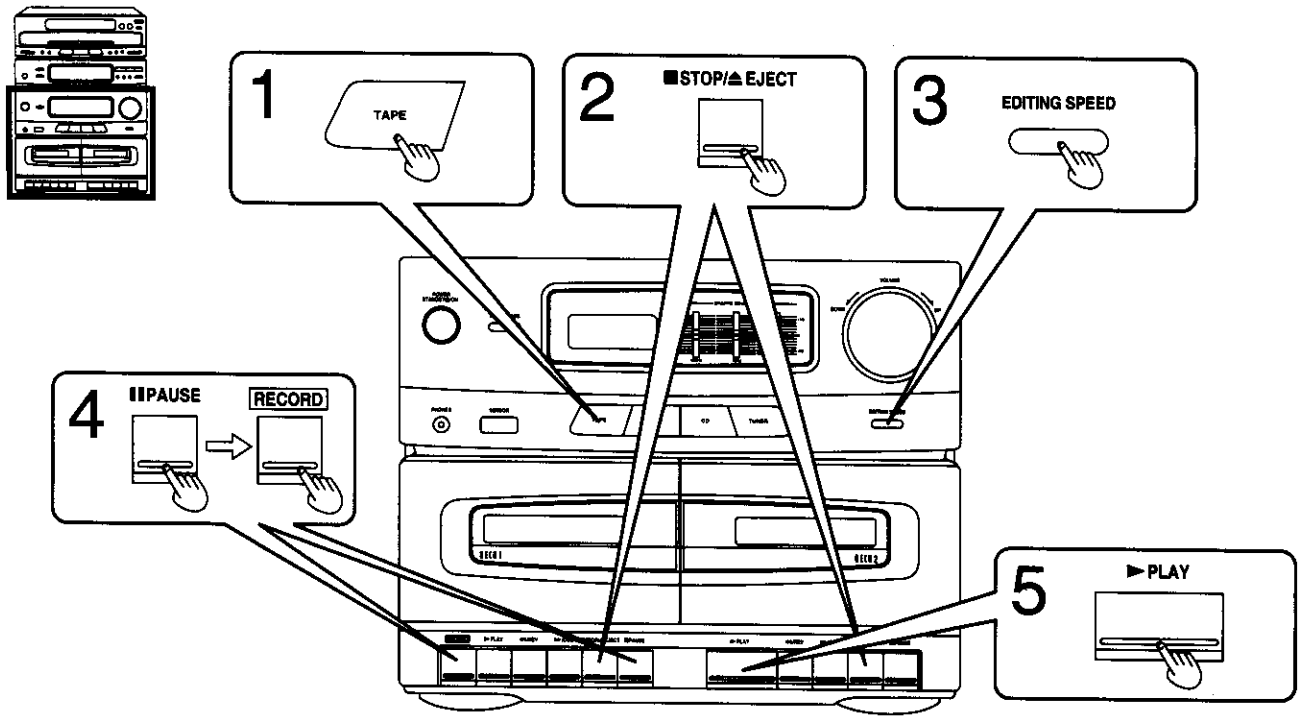
Leader tape
(no recording can be made)

The term "leader tape" refers to the first few revolutions on a cassette tape. No recording can be made on this position of the tape. Before recording, wind the tape to a point just beyond the leader tape.

Making a Recording (continued)

Tape-to-tape recording from deck 2 to deck 1

The recording level and the noise reduction effect of the original (playback) tape will be recorded on the new tape just as they were in the original recording.



1 Press the TAPE input select button.

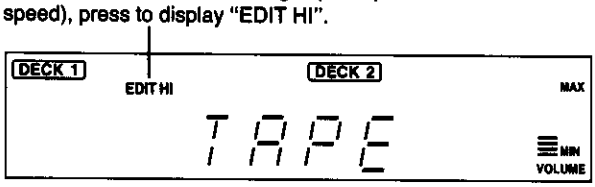
2 Insert the playback cassette into deck 2 and the cassette you are recording on (the editing tape) into deck 1.

The normal grade of tape is recommended.

Check to see that the tape's erasure prevention tabs (see page 53) are intact, and then insert the cassette into deck 1.
You cannot record on the leader tape (the first few revolutions) so take up the leader tape in advance. (See page 37.)

3 Press EDITING SPEED to select editing speed.

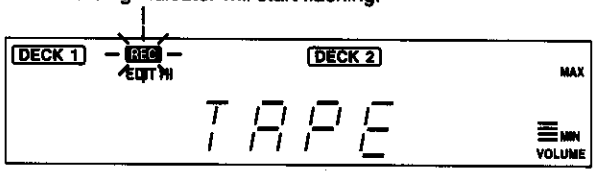
Each time you press,"EDIT HI" is displayed on and off to show the editing speed.
When you wish to record at high speed (about 1.7 times normal speed), press to display "EDIT HI".



When you wish to monitor the sound at a normal speed while recording, press to go off the "EDIT HI" indication.

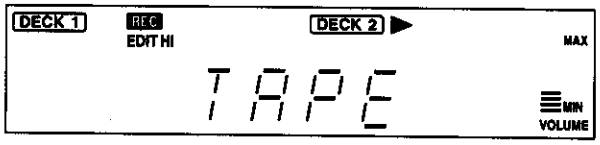
4 Press PAUSE on deck 1, then press RECORD.

The recording indicator will start flashing.



5 Press PLAY on deck 2.

The synchro start function starts tape-to-tape recording.



Notes:

While tape-to-tape recording is in progress, you cannot change the editing speed.

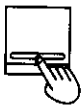
Some TV sets generate noise that might be picked up during tape-to-tape recording. To prevent the possibility of this, do not use this system close to a TV set.

To briefly interrupt tape-to-tape recording

Press PAUSE on deck 1.

(The tape in deck 2 continues playback.)

II PAUSE

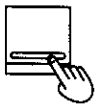


To resume recording, press PAUSE again.

To stop the tape-to-tape recording

Press STOP/EJECT on both decks.

■ STOP/⏏ EJECT



Both decks will stop.

Edit-Recording from Compact Discs

Use the edit-recording safeguard to maintain continuity when changing from one side of the tape to the other.

The number of tracks that can be recorded on sides A and B of the tape is automatically calculated according to the set tape length.

The edit-recording will start after the cassette deck makes a non-recorded passage of about 10 seconds.
So you don't have to take up the leader tape (the first few revolution) before recording.

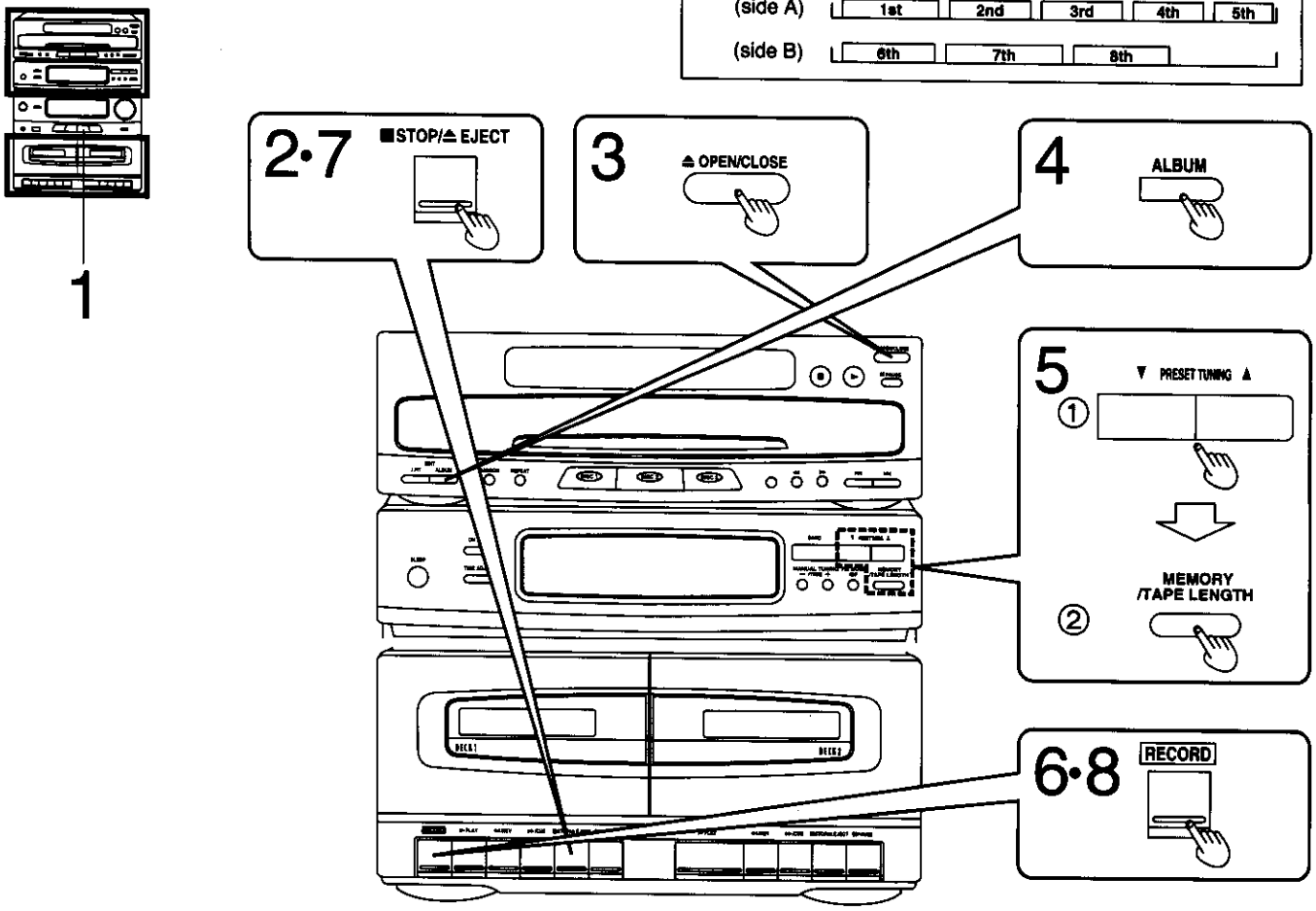
Sequential CD recording (ALBUM)

The number of tracks can be selected sequentially to fit the length of the tape used.

A tape such as follows will be made;

(side A) 1st 2nd 3rd 4th 5th

(side B) 6th 7th 8th



1 Press the CD input select button.

2 Load a cassette in deck 1.
The normal grade of tape is recommended.

Check to see that the tape's erasure prevention tabs (see page 53) are intact and the tape is fully rewound.
Use a tape of under 90 minutes.

3 Press OPEN/CLOSE on the CD changer to load a disc you want to edit.

4 Press ALBUM.
ALBUM indicator will light.

The compact disc changer automatically scans for the peak (highest) level of the entire disc. (ATLS; See page 41.)

The tuner display shows the tape length.

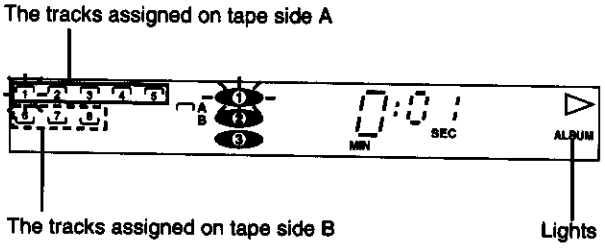
5 Specify the tape length by one minute.

① **Press ▼ PRESET TUNING or PRESET TUNING ▲ to specify the desired time.**
You can specify up to 90 minutes.

② **Press MEMORY/TAPE LENGTH.**

6 Press RECORD for recording side A.

1. After ATLS is over, the cassette deck will automatically advance the tape beyond the leader tape.
2. The CD changer will start a disc play and the edit-recording will start.



3. When the tracks specified on tape side A have been played through, the CD changer will be automatically set to the pause mode.
4. The tape will remain in the recording mode (although no sound is being recorded) and advance to the end of the tape.

7 After recording side A, the deck will stop automatically. Then press STOP/EJECT to turn over the tape.

8 Press RECORD for recording side B.

A non-recorded passage of about 10 seconds will be automatically created, and then the tracks reserved on tape side B will start playing to be recorded.

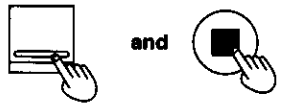
Notes:
You can edit-record up to 20 tracks.

You cannot edit-record the tracks numbering higher than 20.

To cancel sequential edit-recording

Press STOP/EJECT on the cassette deck and the stop button on the compact disc changer.

■STOP/⏏ EJECT



Both deck and changer will stop.

About Automatic Tape Level Setting (ATLS)

Since compact discs generally have a wide dynamic range, careful setting of the recording level is required to achieve optimum recording results.
This system automatically scans (fast search) for the peak (highest) level of the entire disc, and the tape deck then sets the appropriate recording level. During this period, the peak level sound will not be heard.

It takes about 70 seconds to complete ATLS for a compact disc of 60 minutes.

Edit-Recording from Compact Discs

(continued)

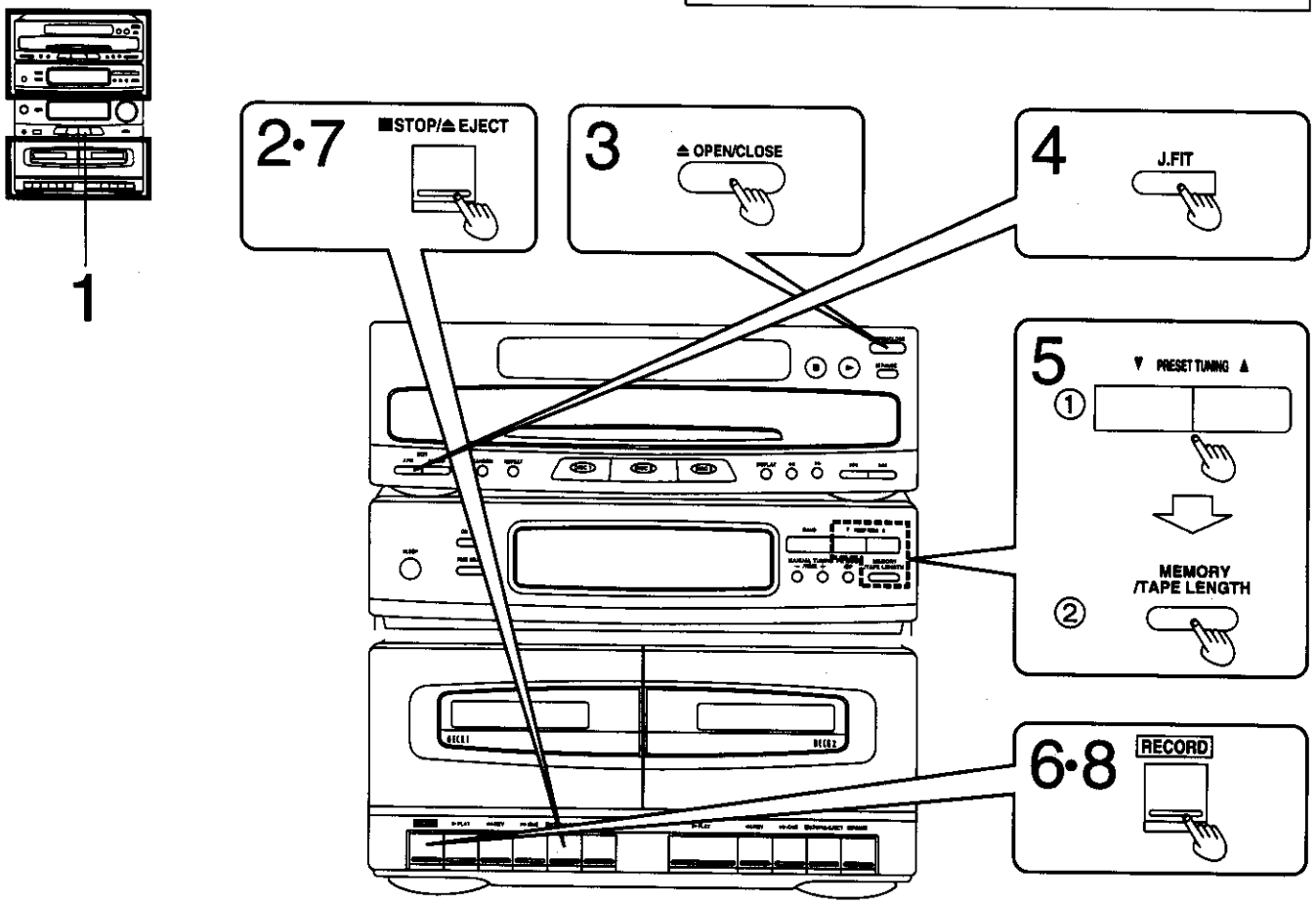
Fit editing (J.FIT)

This function allows the system to select the track order that best fits on tape side "A".
If the amount of blank tape remaining is too great, the compact disc changer will select a different track order which fits better on tape side "A".

A tape such as follows will be made:

(Side A) 1st track | 2nd | 3rd | 8th | 6th

(Side B) 4th | 5th | 7th



1 Press the CD input select button.

2 Load a cassette in deck 1.
The normal grade of tape is recommended.

Check to see that the tape's erasure prevention tabs (see page 53) are intact and the tape is fully rewound.
Use a tape of under 90 minutes.

3 Press OPEN/CLOSE on the CD changer to load a disc you want to edit.

4 Press J.FIT.
J.FIT indicator will light.

The compact disc changer automatically scans for the peak (highest) level of the entire disc. (ATLS; See page 41.)

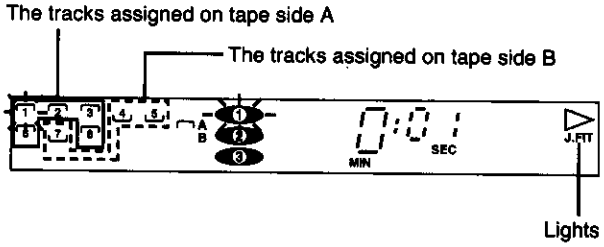
The tuner display shows the tape length.

5 Specify the tape length by one minute.

① **Press ▼ PRESET TUNING or PRESET TUNING ▲ to specify the desired time.**
You can specify up to 90 minutes.
② **Press MEMORY/TAPE LENGTH.**

6 Press RECORD for recording side A.

1. After ATLS is over, the cassette deck will automatically advance the tape beyond the leader tape.
2. The CD changer will start the disc play and the edit-recording will start.



3. When the tracks specified on tape side A have been played through, the CD changer will be automatically set to the pause mode.
4. The tape will continue to advance (although no sound is being recorded) to the end of the tape.

7 After recording side A, the deck will stop automatically. Then press STOP/EJECT to turn over the tape.

8 Press RECORD for recording side B.
A non-recorded passage of about 10 seconds will be automatically created, and then the tracks reserved on tape side B will start playing to be recorded.

Notes:
You can edit-record up to 20 tracks.

You cannot edit-record the tracks numbering higher than 20.

To cancel fit editing

Press STOP/EJECT on the cassette deck and the stop button on the compact disc changer.

■STOP/⏏ EJECT

Both deck and changer will stop.

Program recording from two or three discs

You can record your desired tracks in your desired sequence from two or three discs.

Notes:
The continuity of sound will be interrupted when the tape reaches to the end.

The display on this unit does not show the total time of the programmed tracks.
We recommend that you calculate the required recording length and use an adequate tape.

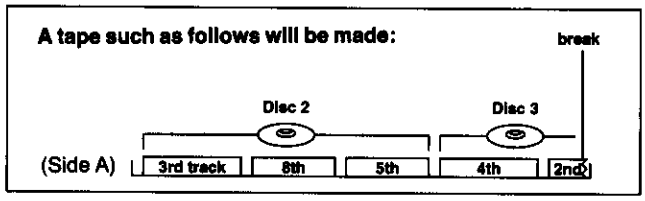
Steps 2 to 6 are available only from the remote control.

1 Prepare the deck for recording.
(Follow the procedures step 1 and 2 on page 36.)

2 Press CD PROGRAM.

3 Press DISC.

4 Press one of the numeric buttons (1–3) to specify which disc contains the track you want to record.



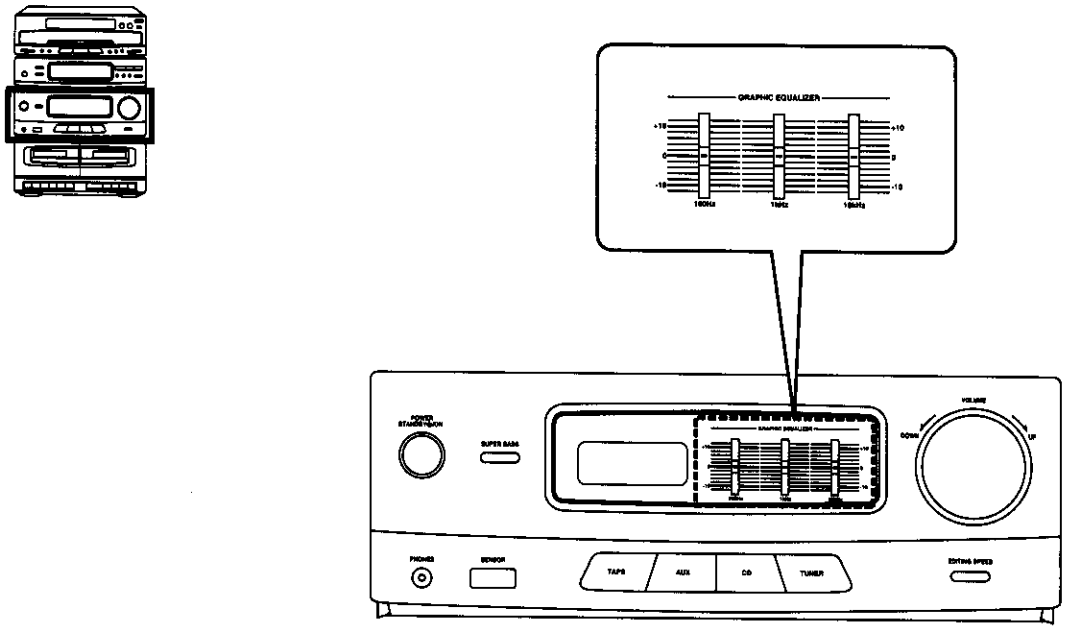
5 Press the numeric button to specify the tracks you want to record in the desired sequence.

6 Repeat steps 3 to 5 as required.

7 Press RECORD on the deck.
Recording will automatically start.

Changing the Tone Quality

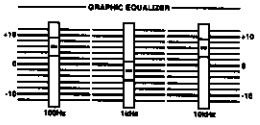
Using the graphic equalizer control



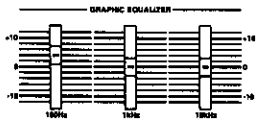
Adjust the graphic equalizer controls as desired.

Examples

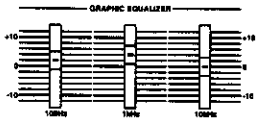
To reproduce disco music more powerfully



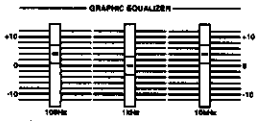
Compensation for frequency response of the speaker system



For clearer vocals



To reproduce classical music



The characteristics of each frequency band

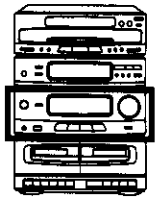
(100 Hz): deep bass range
When this level is increased, the bass guitar and drums will sound louder.
When the level is reduced, indistinct sounds will become more clear.

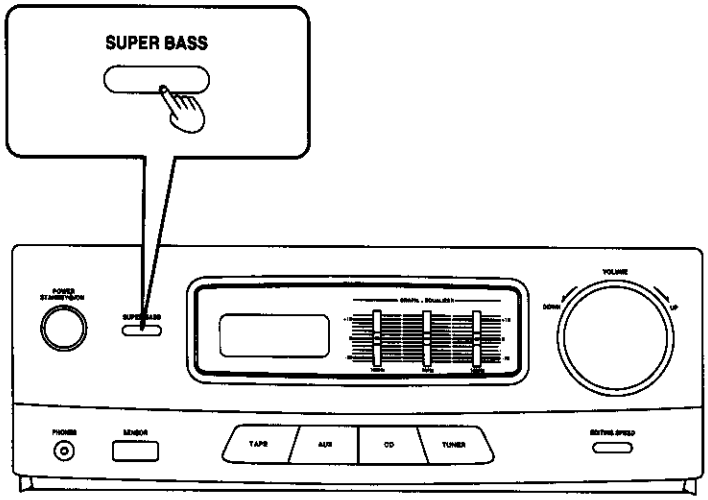
(1 kHz): mid range
When this level is increased, a greater tension is added to sounds, and applause and cheers become even more lifelike, simulating a live concert performance.

(10 kHz): treble range
When this level is increased, an extra glitter can be added to cymbals and the triangle; when the level is reduced, tape "hissing" noise can be reduced.

Note:
You cannot make a recording with the graphic equalizer effect.

To listen with augmented bass (super bass effect)



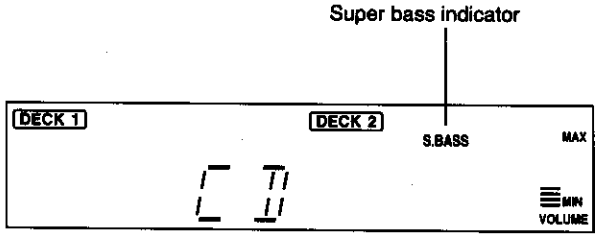


(Also available from the remote control)

Press SUPER BASS.

The super bass indicator will appear.

Note:
You cannot make a recording with the super bass effect.

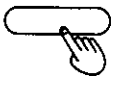


To cancel the super bass mode

(Also available from the remote control)

Press SUPER BASS again.

SUPER BASS

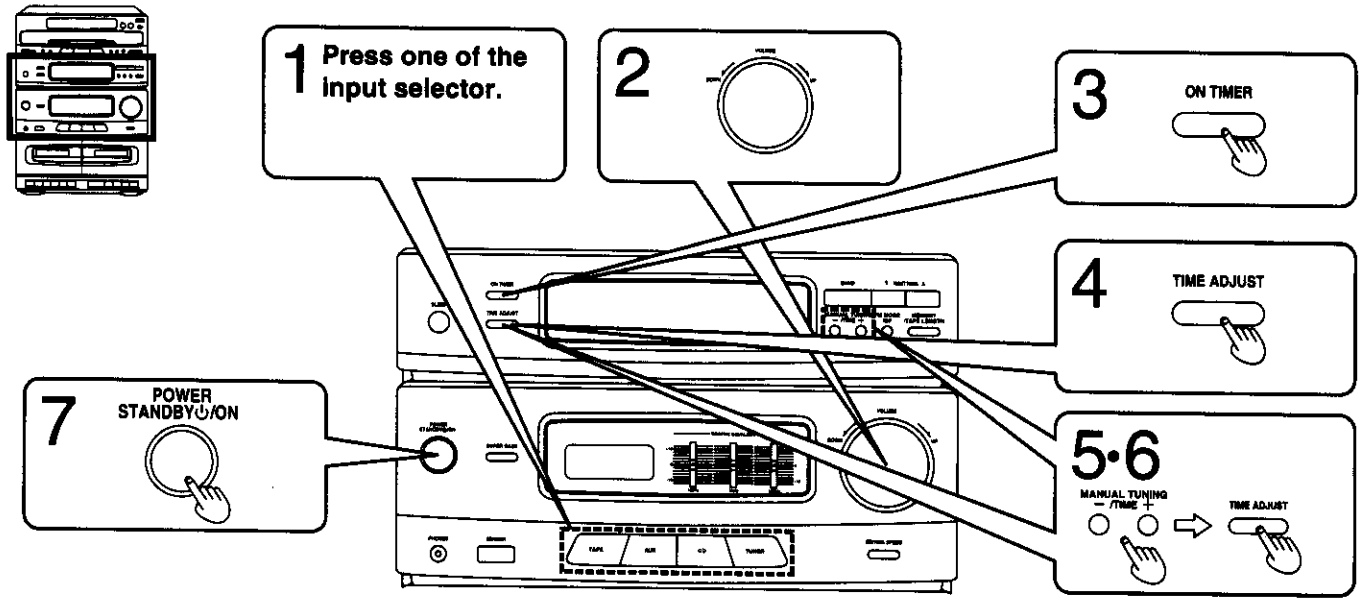


The super bass indicator will go off.

Using the Timer

Setting the timer play

You can use this timer function to program the system to play a desired sound source at a desired time and switch to the standby condition after 60 minutes.



Have you read and completed "Setting the Time of Day" on page 18? If not, please complete these sections before continuing.

The following example shows how to set the timer play function for listening from 7:15. (The system will automatically switch to the standby condition at 8:15.)

Switch on the power.

1 Press one of the input select buttons to select the desired sound source.

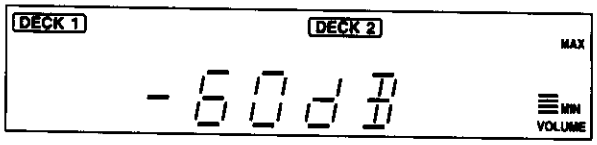
For timer play on the CD changer:
Press the CD input select button.
You can use timer play.

For timer play on the tuner:
Press the TUNER input select button, select the desired band, and tune in a station.

For timer play on the tape:
Press the TAPE input select button.
After step 7, press PLAY on whichever deck you want to play.

Note:
You can activate the timer play on the external unit.
Press the AUX input select button and operate the external unit.

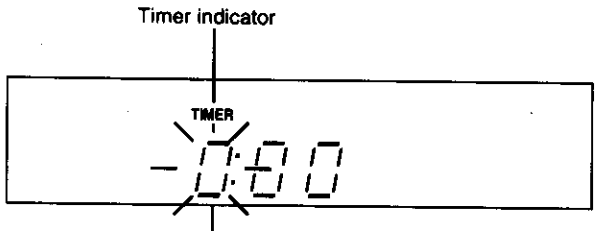
2 Set the volume level for timer play.



3 Press ON TIMER.

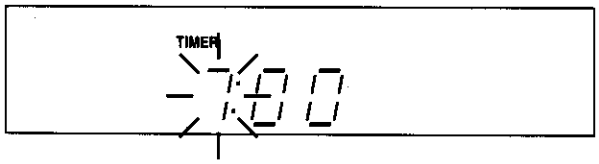
4 Press TIME ADJUST.

The timer indicator will appear.
The 0 will start flashing.



5 Select the hour you want the timer to go on.

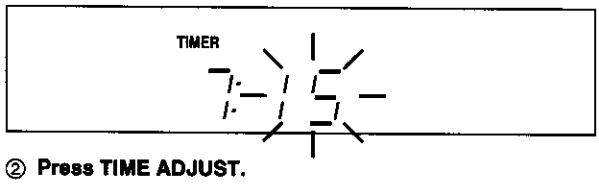
① **Press TIME + or TIME − to set hour. In this case, set to 7.**



② **Press TIME ADJUST.**
The hour indicator will stop flashing and the minute indicator will flash.

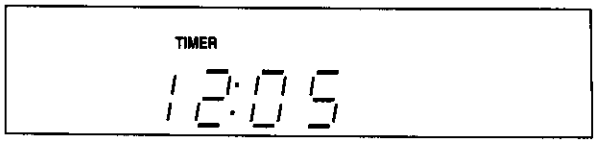
6 Select the correct time you want the timer to go on.

① **Press TIME + or TIME − to set minutes. In this case, set to 15.**



② **Press TIME ADJUST.**
The minute indicator will stop flashing.

7 Press POWER STANDBY ⏻ /ON to switch to the standby mode.



The timer play will start at the preset time with volume level increasing gradually up to the volume level you preset.

Note:
If the power is on, the timer will not function.
The system must be in the standby mode.

To cancel the timer mode

Press ON TIMER.

The timer on time indicator will go out.
The timer play will not occur, but the time ON setting for the timer play will remain in the unit's memory.

To resume regular play after the timer setting has been completed

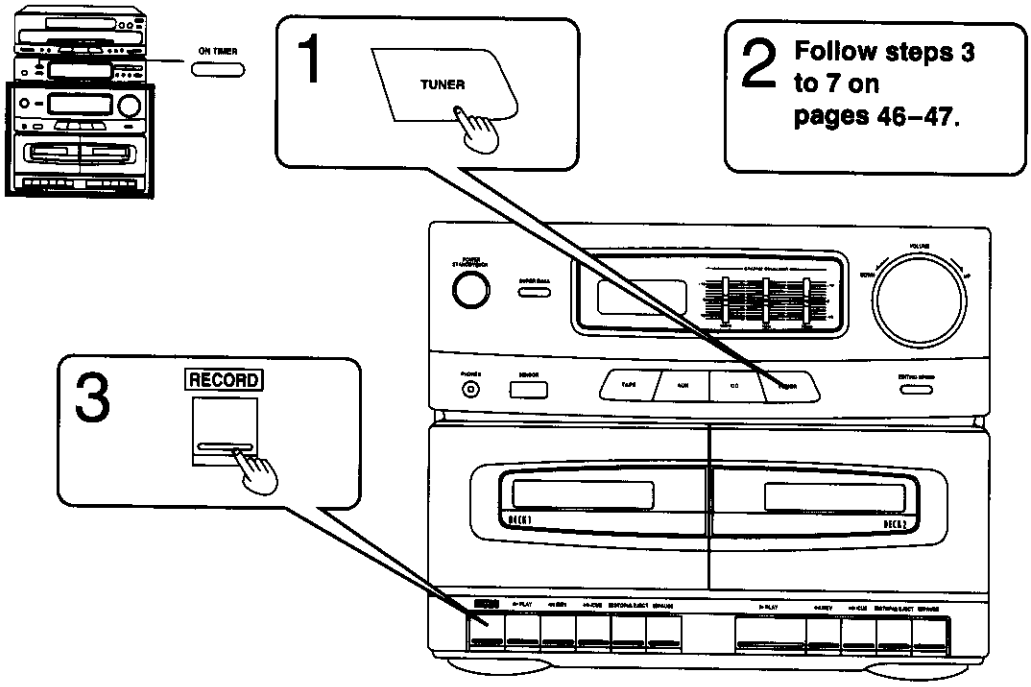
1. Press POWER STANDBY ⏻ /ON to switch on the power.
   When tape timer play is set, first press STOP/EJECT to release the pressed playback button (PLAY).
2. Select the desired listening source.
3. After you've finished listening, be sure to press POWER STANDBY ⏻ /ON to switch the power to the standby mode.
   If setting to the tape timer play, press PLAY in succession.

Even if you change the volume level or music source, the timer play will start as previously set.

Using the Timer (continued)

Setting the timer recording

You can use this timer function when you want to record from the radio at a desired time and switch to the standby condition after 60 minutes.



Have you read and completed "Setting the Time of Day" on page 18? If not, please complete these sections before continuing.

The following example shows how to set the timer recording function for recording a radio broadcast from the tuner.

Switch on the power.

1 **Press the TUNER input select button and tune in the station whose broadcast you want to record. Then insert a cassette into deck 1.**

2 **Follow steps 3 to 7 on pages 46–47 for setting the timer.**

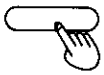
3 **Press RECORD on deck 1.**
Timer recording will start at the preset time.

Note:
If the power is on, the timer will not function. The system must be in the standby mode.

To cancel timer recording mode

Press ON TIMER on the tuner.

ON TIMER



The timer on time indicator will go out.

To resume regular play after the timer setting has been completed

1. Press STOP/EJECT to release the pressed record button (RECORD).
2. Press POWER STANDBY ⏻ /ON to switch on the power.
3. Select the desired listening source.
   When listening to a cassette tape, use deck 2.
4. After you've finished listening, be sure to press POWER STANDBY ⏻ /ON to switch the power to the standby mode.
   Make sure that RECORD on deck 1 is pressed.

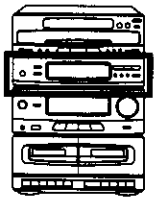
Even if you change the music listening source, the timer recording will start as previously set.

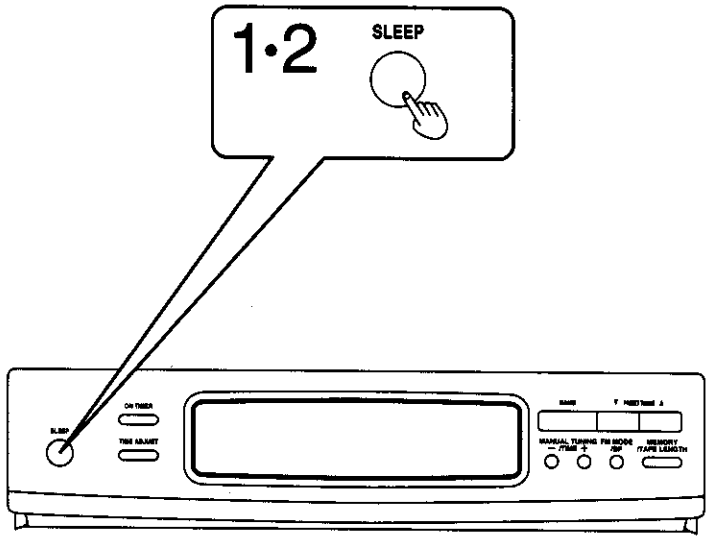
Using the Timer (continued)

To use the sleep timer

You can use this timer function to switch the power to the standby mode at a preset time, starting at 30 minutes from the present time and extending (by 30-minutes intervals) up to 120 minutes.

Use the sleep timer to switch the power to the standby mode automatically in case you fall asleep while listening.

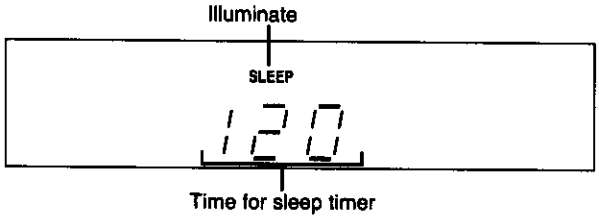




(Also available from the remote control)

1 Press SLEEP.

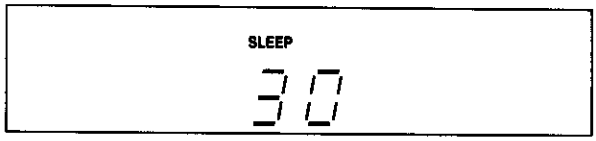
The sleep timer indicator will appear.



The display will return to the previous indication after 5 seconds. Please complete the next procedure within 5 seconds.

2 While the time for sleep timer appears, press SLEEP to set the length of time you would like the system to operate.

The display will show 120 (minutes), 90, 60, 30 and (OFF) in turn.



After about 5 seconds, the display will show the mode display.

To confirm the time remaining on the sleep timer

(Also available from the remote control)

After the display shows the mode display:

Press SLEEP.

SLEEP

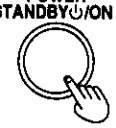
The display will show the time remaining on the sleep timer for approximately 5 seconds.

To cancel the sleep timer mode

(Also available from the remote control)

Press the power switch to put the system in standby mode or press SLEEP until the sleep timer indicator disappears.

POWER STANDBY⏻/ON



or

SLEEP

To use the sleep timer in conjunction with the timer play or timer recording operation

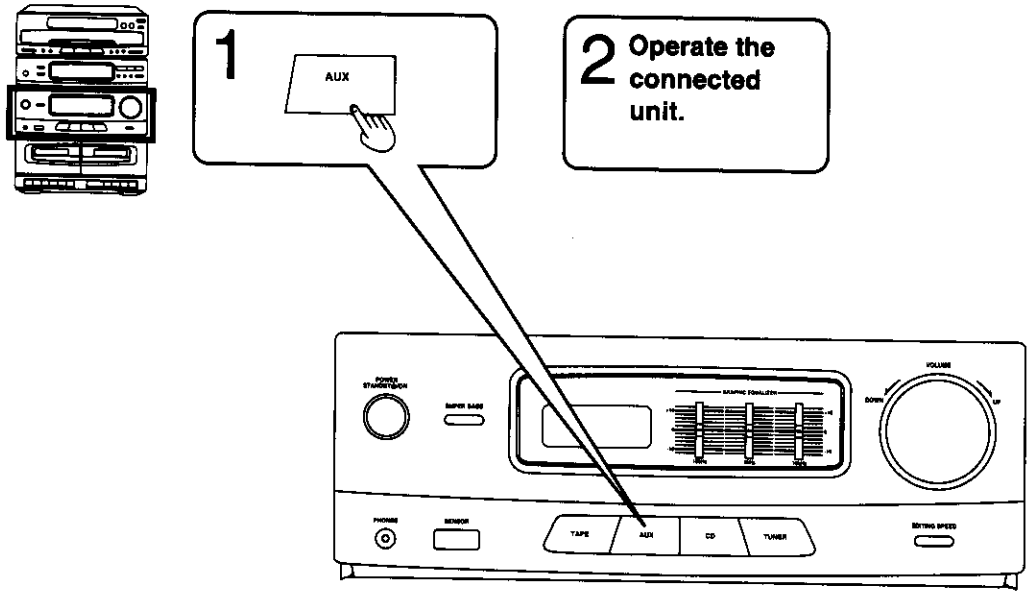
For example, to go to sleep listening to a radio broadcast, and wake up the next morning listening to a compact disc.

1) Set the timer for the timer play.
   (See steps 1 to 6 on pages 46–47.)
2) Press POWER STANDBY ⏻ /ON. This will switch the system to the standby mode.
3) Press SLEEP and set the desired time for the sleep timer.
   This will switch the power on, and the sleep timer indicator will light.
4) Tune in your desired band and station, and adjust the volume level.

Using an External Unit

To enjoy an external source

You can connect an output terminal of a VCR or TV to this system.
(See pages 6–7.)



1 **Press the AUX input select button.**

2 **Operate the unit which is connected to the system.**
See the operating instructions of the unit concerned.

Care & Use

Concerning Cassette Tapes

Selection of cassette tapes

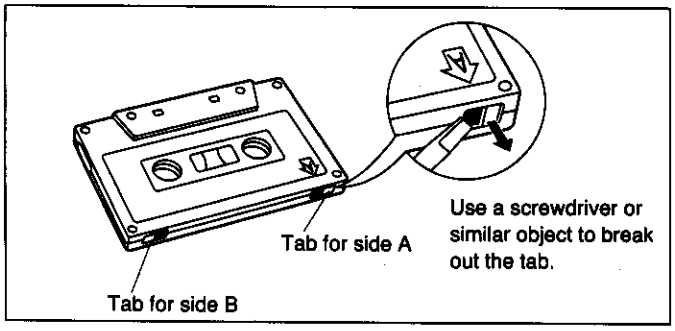
Cassette tapes exceeding 90 minutes:
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the deck mechanism.

Do not use the following types of tapes in this unit:
Fe-Cr tapes (TYPE III)
This type emphasizes the high-frequency range, making it impossible to obtain a flat frequency response.

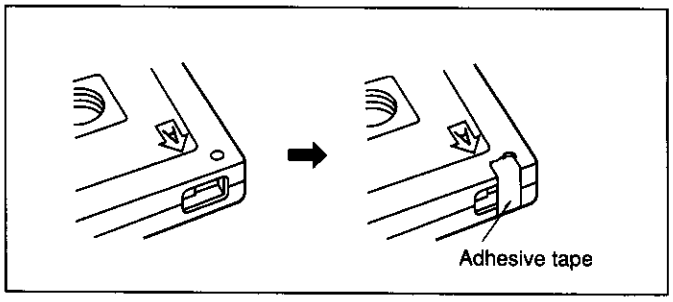
Metal or chromium-type tape:
Sound will be badly distorted.

To prevent erasure of a recorded tape

Remove the erase-prevention tabs (thus preventing recording).



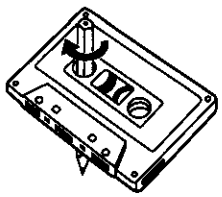
To re-record on a protected cassette:
Cover the slot with adhesive tape.



Tape slack

Tape slack may cause the tape to break.

Use a pencil or similar object to take up the slack.



Improper tape storage

You can damage tape if you store it in the following ways:
In high temperature (35°C or higher) or high humidity (80% or higher) areas.
In a strong magnetic field (near a speaker, on top of a TV, etc.). This can erase a recording.
In direct sunlight.

Care & Use (continued)

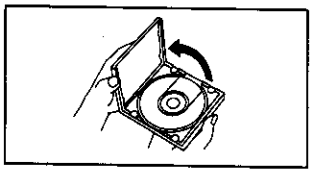
Concerning Compact Discs

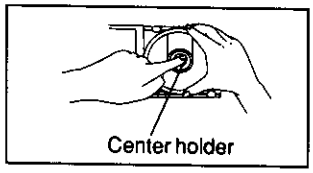
With this system, you can only use compact discs having this mark:

COMPACT disc DIGITAL AUDIO

Handling precautions

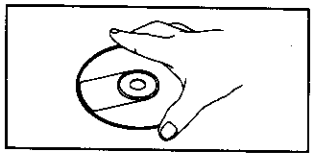
To open the compact disc case, gently press the sides of the top, holding the top at both sides and pull up.
To remove the disc from the case, press the center holder and lift the disc, holding it by the edges.

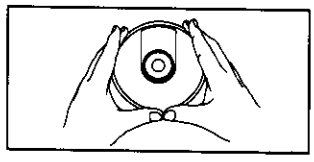




To return the disc to the case, insert the disc with label facing up and press downward at the center.

Hold compact discs by the edges so you will not soil the surface with fingerprints. Fingerprints, dirt, and scratches can cause skipping and distortion.

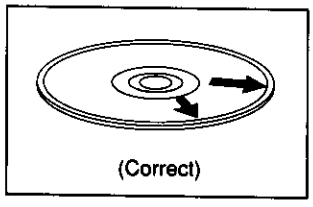


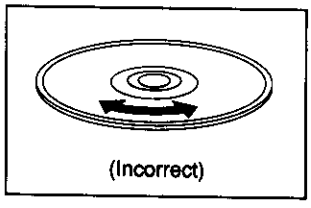


Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids, or any other solvent.

If the surface is soiled, wipe gently with a soft, damp (water only) cloth.

Always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.





If you are taking the disc from a cold to a warm environment, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.

Do not write on the label side with a ball-point pen or other writing instrument.

Storage precautions

Be sure to store discs in their cases to protect them from dust, scratches, and warping.

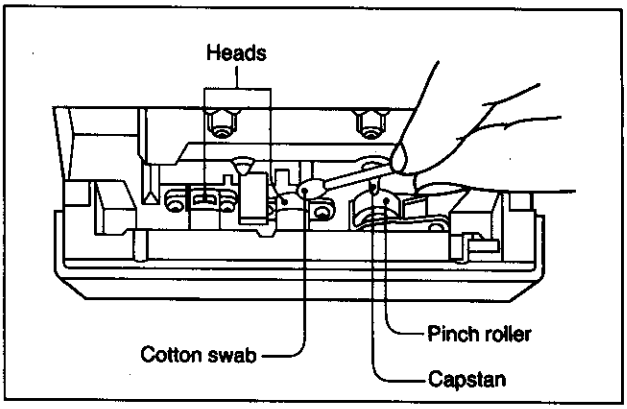
Do not place or store discs in the following places:
1) Locations exposed to direct sunlight.
2) Humid or dusty locations.
3) Locations directly exposed to a heat vent or heating appliance.
4) In the glove compartment or rear deck of an automobile.

Maintenance

Cassette deck head care

To ensure good sound quality for recording and playback, be sure to clean the heads approximately after every 10 hours of use.

1) Turn off the power of the system.
2) Press the stop/eject button to open the cassette holder.
3) Clean the heads, pinch roller, and the capstan shaft with a cotton swab (or with a soft, lint-free cloth) slightly moistened with isopropyl alcohol. Do not use any solution other than alcohol for head cleaning.



Cassette deck head demagnetization

In order to maintain good sound quality during recording and playback, we recommend that you demagnetize the head assembly if there is still distortion or poor sound quality after you have cleaned the heads.

If the head assembly becomes magnetized, it could create noise in your recordings, cause a loss of high-frequency response, or cause the erasure of valuable recordings. There are several types of head demagnetizers that you can purchase at local electronics supply stores.
Follow the instructions that are supplied with the demagnetizer.

Do not touch the head assembly with any type of metal object or tool such as a magnetic screwdriver.

Maintenance of external surfaces

Use a soft, dry cloth to clean the cabinet and controls.
If the surfaces are extremely dirty, use a soft cloth, dipped in a soap-and-water solution or a weak detergent solution. Wring the cloth well before wiping the surfaces. Then wipe once again with a soft, dry cloth.

Never use alcohol, paint thinner, benzine, or a chemically treated cloth to clean the cabinet or controls. Such chemicals may damage the finish of your system.

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
Problems common to all systems		
There is no sound when the power is ON and no bar appears on the volume level display.	Volume is set too low.	Adjust the volume level with the volume control on the amplifier.
The location of the various musical instruments is not well defined.	The (+) and (−) connections to one of the speakers are reversed.	Connect the speaker cords correctly.
The left and right sounds are reversed.	The left and right connections to the speaker are reversed.	Connect the speaker cords correctly.
Only one speaker is emitting sound.	One of the wires of the speaker cords is disconnected.	Connect the speaker cords correctly.
There is no sound when a source is being played.	The (+) and (−) wires of the speaker cords are shorted.	Switch the system to the standby mode, and reconnect the speaker cords so that they are not shorted. Then switch on the power.
There is a low-frequency hum when a source is being played.	A power cord or a fluorescent light is located near a connecting cord.	Keep electrical appliances well away from the connecting cords.
While listening to FM broadcasts		
There is a "rushing" noise during a stereo broadcast which is not audible during a monaural broadcast.	Noise is more likely to appear on a stereo signal than on a monaural signal.	•If you are using an indoor antenna, change to an outdoor antenna. •If you are using a special outdoor antenna, try changing the installation location, height, and orientation. •Try switching off the television or VCR. •Press the FM mode button to change the reception from stereo to monaural mode.
You hear excessive noise during a stereo broadcast, and occasionally the sound disappears.	•The installation location and orientation of the antenna are unsuitable. •The transmitting station is a long distance away.	
The stereo indicator of the tuner flickers and does not light completely.		
The sound of stereo broadcast is badly distorted.	There is a building or mountain nearby. [Distortion is caused by interference between the signal from the transmitting station (direct wave) and the signal reflected from the building or mountain (reflected wave).]	
While listening to AM broadcasts		
You hear an unusual beat sound.	You are using the system with a television on nearby.	Switch off the TV set, or move the system farther away from it.
You hear a low-frequency hum.	The antenna wire is near the power cord.	Separate the antenna wire from the power cord.

Problem	Probable cause(s)	Suggested remedy
When there is a television set nearby		
The picture on the TV disappears or stripes appear on the screen.	The location and orientation of the antenna are incorrect.	•If an indoor antenna is being used, change to an outdoor antenna. •Separate the TV set from the system.
	The wiring at the back of the system is incorrect.	Separate the antenna wire of the TV set from the system.
While listening to tapes		
Sound is low, intermittent, of poor quality, noisy, scratchy, or unsteady.	Heads are dirty.	Clean the heads.
The deck section does not enter the recording mode.	The erase-prevention tabs are removed from the cassette.	Attach tape to cover the space left by removal of the erase-prevention tabs.
While listening to compact discs		
The drawer does not close when you load a disc and press the OPEN/CLOSE button.	The disc is not positioned correctly in the disc tray.	Reinsert the disc.
The display will not show the correct indication. **Disc play does not start when you press the play button.** **A certain part of the disc does not play.**	The disc is not positioned correctly in the disc tray.	Reinsert the disc.
	The disc is loaded upside down.	Reload the disc.
	The disc is dirty.	Wipe the disc with a soft cloth.
	The disc is scratched.	Skip the scratched part of the disc (skip play).
	The disc is badly warped.	Replace the disc with a new one.
	The disc is a nonstandard one.	Replace the disc with a different one.
	There is condensation inside the disc changer.	Switch the power ON, then wait for one hour before using the disc changer.
While using the remote control		
The remote control will not operate the system.	You have installed the batteries in the reverse polarity.	Reinsert the batteries in the correct polarity.
	The batteries are worn out.	Replace the batteries with new ones.

The servicer will require all components to service your system.
Therefore, should service ever be necessary, be sure to bring the entire system.

Technical Specifications

COMPACT AUDIO SYSTEM

AMPLIFIER SECTION

100 Hz–20 kHz continuous power output both channels driven	2×20 W (THD 1%, 6Ω)
1 kHz continuous power output both channels driven	2×24 W (THD 1%, 6Ω)
Total harmonic distortion half power at 1 kHz	0.1% (6Ω)
Input sensitivity and impedance	
AUX	250 mV/24 kΩ
Graphic equalizer	±10 dB (100 Hz, 1 kHz, 10 kHz)
Load impedance	6Ω

FM TUNER SECTION

Frequency range	87.5–108 MHz
Sensitivity	23.3 dBf (4.0 µV, IHF '58)
Total harmonic distortion	
MONO	0.3%
STEREO	0.5%
S/N	
MONO	65 dB
Frequency response	50 Hz–15 kHz (+0.5, −2 dB)
Image rejection at 98 MHz	35 dB
Stereo separation at 1 kHz	35 dB
Antenna terminal(s)	75Ω (unbalanced)

AM TUNER SECTION

Frequency range	
MW	522–1611 kHz
Sensitivity (for 500 mW)	
MW (at 999 kHz)	250 µV/m

CASSETTE DECK SECTION

Track system	4 track, 2 channel
Heads	
Playback	Solid permalloy head
Record/Playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias, 101 kHz
Erase system	AC erase, 101 kHz
Tape speed	4.8 cm/sec
Frequency response	
NORMAL	50 Hz–14 kHz (±3 dB)
Wow and flutter	0.15% (WRMS)
Fast forward and rewind time	Approx. 120 seconds with C-60 cassette tape

GENERAL

Power consumption	96 W
Power supply	AC 50 Hz, 230–240 V
Dimensions (W×H×D)	270×279×356 mm
Weight	5.95 kg

COMPACT DISC CHANGER

AUDIO	
No. of channels	2 (left and right, stereo)
Frequency response	2 Hz–20 kHz, ±1 dB
Output voltage	1.2 V (at 0 dB)
Dynamic range	85 dB
S/N	95 dB
Total harmonic distortion	0.02% (1 kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	1 bit 2 DAC MASH
Output impedance	1 kΩ
Load impedance	More than 10 kΩ
PICKUP	
Wavelength	780 nm
GENERAL	
Dimensions (W×H×D)	270×89.5×315 mm
Weight	2.9 kg

SPEAKERS

Type	2-way, 2-speaker, bass-ref
Speaker(s)	
Woofer	13 cm cone type
Tweeter	Piezo type
Impedance	6Ω
Input power	50 W (music)
	25 W (DIN)
Output sound pressure level	88 dB/W (1.0 m)
Cross over frequency	10 kHz
Frequency range	50 Hz–20 kHz (−16 dB)
	62 Hz–18 kHz (−10 dB)
Dimensions (W×H×D)	200×367×204 mm
Weight	2.9 kg

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

MASH is a trademark of NTT.

Memo

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

[redacted]ted in Singapore

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